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NORFOLK COUNTY COUNCIL.

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# ANNUAL REPORT

OF THE

## COUNTY MEDICAL OFFICER OF HEALTH

AND

## SCHOOL MEDICAL OFFICER

FOR THE YEAR

1910.



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PART II.

## REPORT OF THE COUNTY MEDICAL OFFICER

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BOUNDARIES URBAN DISTRICTS. PINK      BOUNDARIES RURAL DISTRICTS. BLUE



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## TO THE NORFOLK COUNTY COUNCIL.

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My Lords and Gentlemen,

I beg to present my Annual Report for the year 1910.

As formulated in the Regulations of the Local Government Board, it is divided into Sections dealing with Housing, Water Supply, Midwives, Isolation Hospital Administration, River Pollution, Sale of Food and Drugs Acts, etc.

Certain Statistical Tables which I have prepared, and on which my Report is largely based, similar to those published in previous Reports, have not been published, but they can be printed and published as an Addendum if this is considered necessary.

My Report for 1909 showed a series of records in lessened general and infantile death rates, and in the lessened incidence of notifiable infectious diseases. It is a matter for satisfaction that 1910 established even fresh records in these matters.

I am glad to note that only 8 of the 33 Reports of the District Medical Officers of Health were not printed, and of these only 1 (that of West Lynn) was in manuscript. This is a great improvement as compared with 1907, when only 16 Reports were in print and no fewer than 12 were in manuscript.

It would be a useful feature if in future each District Medical Officer of Health would include a Summary of Improvements effected during the year under consideration in his District, as well as of matters remaining under consideration or in abeyance which have been referred to in previous Reports.

Your obedient Servant,

J. T. C. NASH.



## Administrative County of Norfolk.—Area and Population.

The Preliminary Report of the Census of 1911 states that the area of the Administrative County in statute acres (land and inland water) is 1,303,570, accommodating 77,591 families or separate occupiers and 321,748 persons, of whom 159,388 are males and 162,360 are females.

The increase of population during the intercensal period is 10,433, or an increase of 4·7 per cent., as compared with an increase of 10·9 per cent. for England and Wales as a whole. The average annual increase of population was therefore 1,043 persons.

With the exception of King's Lynn and Swaffham, an increase of population is recorded in the Urban Districts, the largest increases being in Sheringham (1,012) and Walsoken (648).

It is satisfactory to note that of the 20 Rural Districts, 17 show an increase, the exceptions being Depwade, Henstead, and Swaffham; Docking, Erpingham, and Marshland each show an increase of over 1000 persons.

The following Table shows the Census populations for 1901 and 1911 and the populations estimated by the District Medical Officers of Health for their respective Districts for 1910. From the figures it is apparent that the total population of the 12 Urban Districts was slightly over-estimated for 1910, while the total population of the 20 Rural Districts was considerably under-estimated, the net result being that the Census figures of April, 1911, showed for the Administrative County a larger population by over 7000 than that estimated by the District Medical Officers of Health for the middle of 1910. The real error is about 6,250, as nine months' growth of population should be added to the 1910 estimates.



DISTRICT.	Area in Acres (Land and Inland Water).	POPULATION			Actual Increase or Decrease in Intercensal Period.	
		1901.	1911.	Estimated by District M.O.H. 1910.		
URBAN.						
Cromer ..	1,062	3,781	4,074	4,263	Increase. 293	Decrease.
Diss ..	3,674	3,745	3,769	3,800	24	
Downham Market ..	1,003	2,472	2,497	2,500	25	
East Dereham ..	5,313	5,545	5,729	5,545	184	
New Hunstanton ..	359	1,893	2,510	1,893	617	
North Walsham ..	4,256	3,981	4,254	4,380	273	
Sheringham ..	877	2,364	3,376	3,000	1,012	
Swaffham ..	7,592	3,371	3,234	3,300		137
Walsoken ..	4,907	3,250	3,898	3,667	648	
Wells ..	2,670	2,494	2,565	2,445	71	
King's Lynn M.B. .	3,067	20,288	20,205	21,760		83
Thetford M.B. ..	7,096	4,613	4,778	4,613	165	
Totals ..	41,876	57,797	60,889	61,166		
RURAL.						
Aylsham ..	69,341	17,053	17,346	16,693	293	
Blofield ..	45,785	11,845	12,159	10,658	314	
Depwade ..	79,742	20,115	19,934	18,125		181
Docking ..	88,091	15,741	16,942	15,741	1,201	
Downham ..	81,930	14,837	15,527	14,500	690	
Flegg East and West ..	28,991	9,191	9,931	9,909	740	
Erpingham ..	62,218	16,118	17,137	18,236	1,019	
Forehoe ..	38,528	11,329	11,383	11,329	54	
Freebridge Lynn ..	75,075	11,847	12,107	11,847	260	
Henstead ..	42,380	10,358	10,285	10,358		73
West Lynn ..	1,638	662	935	595	273	
Loddon and Clavering ..	60,273	12,393	12,550	11,953	157	
Marshland ..	54,572	11,352	12,384	11,216	1,032	
Mitford and Launditch ..	102,371	18,437	18,701	18,400	264	
St. Faith's ..	48,933	10,378	10,807	11,163	429	
Smallburgh ..	62,627	13,348	13,424	13,847	76	
Swaffham ..	74,556	7,644	7,571	7,644		73
Thetford ..	95,873	9,950	10,061	9,950	111	
Walsingham ..	79,996	17,127	17,248	17,500	121	
Wayland ..	68,774	13,793	14,427	13,792	634	
Totals ..	1,261,694	253,518	260,859	253,456		
Urban Districts ..	41,876	57,797	60,889	61,166	3,092	
Rural ..	1,261,694	253,518	260,859	253,456	7,341	
Total ..	1,303,570	311,315	321,748	314,622	10,433	



An under-estimate is more satisfactory than an over-estimate in checking the vital statistics as given by the District Medical Officers of Health, with the single exception of the birth-rate. The infantile mortality rate is of course independent of the population; being based on the number of deaths of infants under 12 months of age per 1000 children born during the year.

## The Birth-Rate.

There were registered during 1910, in the Urban Districts 1,351 births, and in the Rural Districts 5,645, or a total of 6,996 births, giving for an estimate of a population of 320,870 persons in 1910 (as based on the Census population of 321,748 in April, 1911), a birth-rate for the Administrative County of Norfolk of **21·8** for the year 1910.

The birth-rate for England and Wales in 1910 was 25·1, the lowest on record. Norfolk has therefore a birth-rate of 3·3 below that of the country in general. When the details of the Census are available it will be possible to calculate to what extent this difference may be more or less affected by age and sex distribution.

The following are the revised birth-rates for the Administrative County of Norfolk since 1907, the year for which the first Report of the County Medical Officer of Health was published:—

Year	..	1907	1908	1909	1910
Birth-rate	..	22·68	22·66	21·86	21·8

A continuous decline in an already low birth-rate is clearly evident, and it is but a happily also continuous greater decline in the death-rate hitherto which enables the population to increase. The decline in the death-rate cannot, however, continue indefinitely, and unless serious consideration is given to this question by *individual* members of the State, the position will shortly become very serious. Generally speaking, people are getting too pampered and selfish, and begrudge the expense and trouble of bringing up a family.



## The Death Rate.

The total deaths recorded in the District Medical Officers' Returns amount to 3811 for the year 1910, but the Report for Blofield R.D. excludes all statistics relating to the County Asylum. 117 deaths which occurred in the County Asylum during 1910 must therefore be added, making a total of 3928 deaths in the Administrative County of Norfolk.

When these Asylum deaths are distributed *pro rata* between the Urban and Rural Districts the uncorrected death rates per 1000 population for the Administrative County of Norfolk work out as follows:—

Urban Districts	..	..	11·81
Rural Districts ..	..	..	12·34
Administrative County of Norfolk	..	..	12·24

Applying the correction factor for age and sex, the corrected death rate for the Administrative County of Norfolk for the year 1910 is **10·11**. The death rate for England and Wales for 1910 is 13·5; and for England and Wales less the 213 chief towns 12·3 is the corrected death rate.

The low death rate of 1910 was in my opinion chiefly owing to the favourable meteorological conditions which existed; but some proportion of the decline of the death rate for the County is no doubt attributable to increased sanitary efficiency, though much remains to be done in most districts before we can claim pre-eminence in this respect.

The small sea-coast Urban Districts of Cromer, Sheringham, and New Hunstanton had very low death rates—corresponding with their low birth rates. Amongst the Urban Districts the highest uncorrected death rates were recorded in Wells 16·40 (population 2560), Swaffham 14·78 (population 3247), and the Municipal Borough of King's Lynn 13·11 (population 20,211).

Amongst the Rural Districts the highest uncorrected death rate was recorded at St. Faith's 16·24 (population 10,775), and the lowest in Henstead 9·24 (population 10,290), and West Lynn 5·50 (population 908).



## Infantile Mortality.

I have pointed out in previous Reports that the infantile mortality is in many ways a safer index of the health of a district than the general mortality, because it is more reliable and exact—the factors being quite definite, viz., the number of deaths of infants under 1 year of age registered during the year, being calculated per 1000 infants born during the year.

In the Urban Districts 81 infant deaths occurred and 1357 births were registered, giving an infantile mortality for the Urban Districts of just under 60. In the Rural Districts 414 infant deaths were registered, and we have already noted 5645 births, giving an infantile mortality figure of 73·34.

In the Administrative County of Norfolk the infantile mortality figure for 1910 works out at the satisfactorily low rate of 70·47. Of the 495 deaths of infants under 1 year, 489 were stated to be certified, and 6 uncertified. Measles accounted for 4 deaths, and Whooping Cough for 15 deaths of infants under 1 year of age. Diarrhœal diseases accounted for 26 deaths, of which 10 were ascribed to Enteritis and 9 to Gastritis. 130 deaths were ascribed to premature birth, and of these 97 died within 1 week of birth, and 120 within 1 month of birth. 22 additional deaths were ascribed to congenital defects, 4 to want of breast milk resulting in starvation, while no fewer than 89 infant deaths were ascribed to Atrophy, Debility, and Marasmus. These are largely preventable deaths, and many of these infants' lives would be saved if notification of births was adopted, to be followed up by prompt visits from properly trained health visitors capable of detecting and rectifying faulty methods of feeding and hygiene. 10 infants' deaths were ascribed to tuberculous diseases, 6 to Syphilis, and 64 to Bronchitis and Pneumonia. 6 deaths were due to overlying and suffocation, and 3 were ascribed to rickets. Many of these deaths were obviously avoidable, and it is only too clear that many infant lives are sacrificed for want of knowledge.

In Norfolk the Urban areas in the Administrative County are small, so that overcrowding of houses on a given area occurs only in a limited sense, and the conditions generally approximate to those of Rural areas. Hence one does not expect to find such marked differences in Urban and Rural death rates in Norfolk as are frequently manifested in other counties which include large townships in the administrative area.



I have in previous Reports shown the influence of wet, cool Summers in reducing infantile mortality, and stated my opinion that this acts largely through the concomitant lessened prevalence of flies and of germ-bearing dust rafts, but principally the former. Hence one reason why I include a Meteorological Section in my Annual Report.

The reduction in the infantile mortality in 1910 was very marked, as shown by the following figures :—

1907	1908	1909	1910
91·82	102·69	82·49	70·47

Among the Urban Districts the infantile mortality figure was highest in Walsoken (92·78) and lowest in New Hunstanton, where no infant deaths were registered, although 33 infants were born in the course of the year.

Among the Rural Districts the infantile mortality figure exceeded 100 per 1000 births in Wayland (103·70) and Thetford (100·45) Rural Districts, and exceeded 90 in Downham Rural (91·66) and St. Faith's (93·75). It was below 75 in 12 Rural Districts.

The following extracts taken from the District Medical Officers of Health Reports bear on the subject of Infantile Mortality :—

*Aylsham*.—"Few child-bearing women in the District are engaged in industrial pursuits, and I know of no other cause operating which would give rise to an unusual number of prematurely-born children. The subject deserves investigation, and some additional light might be thrown on it were the births of all still-born and prematurely-born infants registered and notified to the Medical Officer of Health."

It is satisfactory to know that all the deaths of infants under one year of age were certified, and that only one among them was of an illegitimate child.

*Blofield*.—"There were but 14 deaths of infants under one year of age during the year. This gives the remarkably low infantile mortality rate of 59·5 per 1000 births, and establishes an easy record for the last ten years. I will not attempt to offer an explanation of this happy state of affairs, as it would very possibly be nullified by the experience of future years. There has



been no bonus offered to mothers for successfully rearing their infants, and so far as I can learn the number of insurance policies taken out for infants has not diminished.

An analysis of the causes of death makes the figures even more remarkable, as seven out of the fourteen deaths were attributed to premature birth. There were therefore only seven infants who, with a fair start in the race of life, succumbed in the first year. Four of these died from Marasmus or Debility, and none from infectious diseases."

*Docking*.—"Of the deaths under one year, three were illegitimate."

*Downham*.—"Twenty-three illegitimate children born, two died."

*Erpingham*.—"In his Report for 1909 Dr. Nash mentions the appointment of a public scavenger and many other sanitary improvements in Holt. The infantile death rate has been reduced from 186·5 in 1907 to 88·8 per 1000 births in 1910."

*Forehoe*.—"The infantile mortality shews a great improvement."

*Freebridge Lynn*.—Shows a marked decrease.

*Marshland*.—Infantile mortality rate 48·6. "This is 38·4 below the average for the last 10 years."

*Mitford and Launditch*.—"Infantile death rate (54·9) is by far the lowest on record."

*St. Faith's*.—"Infantile death rate risen from 43·2 to 93·7 in the past year. Causes general. No deaths were ascribed to any form of Diarrhœa."

*Swaffham*.—Rate per 1000 births 71; average for past 10 years being 103·45 per cent. were due to wasting diseases (Premature Birth and Debility). "One death only was due to Gastritis, which fact, I trust, points to increased knowledge and care among the mothers as to the food suitable for infants."

*Walsingham*.—73 per 1000 births; 10 years ago was 115.

*Wayland*.—"In view of the decreased birth rate throughout the whole country, it becomes a matter of National importance that the infant mortality should also show a steady decrease. Unfortunately the very low rate of last



year has not been maintained in this District; although the actual number of deaths of infants is not much greater than last year, 28 against 20, yet owing to the very considerable fall in the number of births registered, the rate of infant mortality per 1000 births has risen from 63 last year to 103·7 for 1910. Although this rate is still considerably below that for England and Wales, which was 109, the lowest on record, yet this increased rate is very disappointing after the excellent results achieved last year, not only in this District, but throughout the County.

“On analysis, the outstanding point is that more than half of the total number of these deaths were due to Whooping Cough (7) and wasting diseases (Premature Births and Debility, 8). Both of these ought to be preventible causes of infant mortality. To the former I shall refer later. With regard to what are described as wasting diseases, it is difficult to account for the proportionately large number of deaths in the first week of life, due to Premature Birth and Debility. They are due to causes at work in the mother before the birth of the infant, but such causes as grinding poverty with insufficient nourishment, improper occupations, are not much in evidence in a Rural District, but I imagine that carelessness on the part of prospective mothers as to the possible ill-effects of more arduous domestic duties, such as mistimed energy at the washtub, in the later period of pregnancy, or inability to obtain help, may be partly responsible for some of these cases.

“It is satisfactory to note that only one death comes under the heading of ‘Diarrhoeal Diseases,’ which fact apparently points to greater care and increased knowledge in the mothers as to the feeding of infants. Notwithstanding this good result this year, I would recommend the adoption of the Notification of Births Act, and that immediately a birth was notified a properly-prepared pamphlet of advice as to the feeding and rearing of infants should be given to the mother for her guidance, in the hope that benefit might accrue to some of the infants.

“In a Rural District this may not appear to be necessary, but I feel sure it is a step in the right direction to familiarise the girls of to-day, about to become the mothers of to-morrow, with the proper methods of bringing up healthy children.”



## URBAN DISTRICTS.

*Cromer*.—"Only one infant death during year."

*Dereham*.—"Eight deaths under one year, and of these three were due to Premature Birth and one to Suffocation."

*Downham Market*.—"Only one death under one year from Premature Birth."

"The absence of any spell of hot weather during the summer may have partly accounted for this low mortality; hot weather with its attendant flies, decomposing food, and Diarrhœa accounting for much infantile disease."

"The Notification of Births Act is not adopted."

"During the early part of the year your Council allowed me to provide cards of instruction as to the feeding and care of infants. These are given out on the registration of births in the District, and supply in many cases much needed information. I am indebted to the Sub-Registrar, Mr. E. A. Walker, for their distribution. I am confident this is a step in the right direction and will certainly tend to lessen the amount of infantile disease caused by ignorance."

*Hunstanton*.—"No deaths of infants under one year."

*Sheringham*.—"The infant mortality rate, which expresses the number of deaths in children under one year old occurring in every 1000 births registered, is perhaps the most important rate dealt with in the table of vital statistics. Amongst other things, it furnishes information as to the social conditions of the inhabitants, their prosperity or poverty, their mental enlightenment, or it may be mental apathy and ignorance."

"This year (1910) there have been 6 deaths occurring in children under one year old."

"The deaths were all certified and were due to the following causes:—Inanition or Starvation, 1; Rickets, 1; Convulsions, 1; Suffocation, overlying, 1; Premature Birth, 1; other causes, 1; total, 6. Of these the first four are preventable causes. Inanition or Starvation from want of breast milk, Rickets, and Convulsions are all directly due to want of knowledge of suitable foods on the part of the mother, and consequent improper feeding of

the infant. Suffocation by overlying is directly due to ignorance in the management of the infant in taking the child out of its crib into the parents' bed.

“Can anything be done to remedy this evil? Is there any means at hand of preventing in the future these deaths due to ignorance on the part of the parent?”

“The first principle of treatment of a disease, whether of an individual or of a community, is in the first place to remove the cause, if possible.

“What is the cause, and is it possible to remove it?”

“The cause is undoubtedly ignorance on the part of the mother, and it is possible to remove it by supplying concise instructions as to the feeding and management of infants to each mother directly after the birth of each child.

“This is provided for by an adoptive Act, the Notification of Births Act, the question of the adoption of which will this year (1911) come before you.”

*North Walsham.*—“Infantile death rate 39·2 per 1000 births registered; the lowest recorded.”

*Wells.*—“Infantile mortality keeps satisfactorily low.”

*Thetford M.B.*—“Low rate of infantile mortality; 47·6 per 1000 births.”

*King's Lynn M.B.*—No comments are made, but the Table of Vital Statistics shows the lowest recorded 67·62, as compared with an average of 113·94 since 1900.

## **Infectious Diseases Notifiable under the Notification Act.**

The compulsorily notifiable diseases are:—Small-pox, Scarlet Fever, Diphtheria, Membranous Croup, Enteric Fever, Relapsing Fever, Continued Fever, Puerperal Fever, Cholera, Typhus Fever, Erysipelas, and Plague.

[Pulmonary Tuberculosis is notifiable in Poor Law and Hospital Practice.]



A local authority may, by resolution, make an order extending compulsory notification to any other infectious disease for a stated or unlimited time, provided the resolution is confirmed by the Local Government Board.

By such means Measles is a notifiable disease in Sheringham and Walsoken Urban Districts and in East and West Flegg Rural District, and Chicken-pox is a notifiable disease in Marshland R.D.

The following tabular statement shows the incidence, based on actual notifications, of certain of the chief notifiable infectious diseases in the Administrative County of Norfolk during 1910 :—

	Diphtheria	Scarlet Fever.	Enteric Fever.	Erysipelas.	Puerperal Fever.
20 Rural Districts ..	207	306	59	86	3
12 Urban Districts ..	26	65	16	18	1
Administrative County ..	233	371	75	104	4

The 20 Rural Districts having an estimated combined population for 1910 of approximately 260,315, and the 12 Urban Districts an estimated combined population of approximately 60,580, the *case incidence* per thousand population was as follows :—

	Urban Districts.	Rural Districts.	Administrative County.
Scarlet Fever .. ..	1·07	1·17	<b>1·15</b>
Diphtheria .. ..	0·42	0·79	<b>0·72</b>
Enteric Fever .. .	0·26	0·22	<b>0·23</b>
Erysipelas .. .	0·29	0·33	<b>0·32</b>
Puerperal Fever ..	0·01	0·01	<b>0·01</b>

The *case mortality*, or percentage of deaths to notifications for the 12 Urban and 20 Rural Districts, and for the Administrative County as a whole, are as follows :—

ADMINISTRATIVE COUNTY OF NORFOLK, 1910.—CASE MORTALITY.

Disease.	12 Urban Districts.	20 Rural Districts.	Administrative County.
Diphtheria .. ..	7·69	2·41	3·00
Scarlet Fever .. ..	1·53	1·96	1·88
Enteric Fever .. ..	1·53	8·47	8·00
Erysipelas .. ..	..	4·65	3·84
Puerperal Fever .. ..	..	66·66	50·00

The seven principal Zymotic diseases are Measles, Scarlet Fever, Diphtheria, Enteric Fever, Whooping Cough, Small-pox, and Diarrhœa. They accounted for 16 deaths in the 12 Urban Districts and for 64 deaths in the 20 Rural Districts, or a total of 80 deaths in the Administrative County, giving a *Zymotic death-rate* of 0·26 for the Urban Districts, of 0·24 for the Rural Districts, and of **0·24** for the Administrative County.

The number of deaths in the Administrative County from each of the seven principal Zymotics were as follows:—Measles 22, Scarlet Fever 7, Diphtheria 9, Enteric Fever 7, Whooping Cough 17, and Diarrhœa 18, giving death-rates for each disease respectively of 0·069, 0·021, 0·028, 0·021, 0·052, 0·055 per 1000 population.

These are satisfactorily low, and the combined death-rate of these seven principal Zymotic diseases should be compared with the death-rates from Phthisis and from Cancer in order to appreciate the relative importance of these diseases in our mortality returns.

There was a very satisfactory decrease in the total amount of notifiable infectious diseases in Norfolk during 1910, as illustrated by the following table :—



# NOTIFICATIONS OF INFECTIOUS DISEASES IN ADMINISTRATIVE COUNTY OF NORFOLK.

	1907.	1908.	1909.	1910.
Small-pox .. ..	0	0	0	1
Scarlet Fever .. ..	673	563	753	351
Diphtheria and Membranous Croup }	281	345	240	232
Enteric Fever .	108	174	50	75
Puerperal Fever ..	14	13	2	4
Erysipelas .. ..	149	103	120	104
Totals ..	1225	1198	1165	767

The reduction was chiefly in the amount of *Scarlet Fever*.

During 1910 no cases of this disease were notified in Hunstanton and Thetford Urban Districts, while three Urban and one Rural District each reported only one case. The disease was most rife in the districts of Mitford and Launditch, Smallburgh, Marshland, Depwade, Downham, and Erpingham Rural Districts, and in East Dereham Urban District.

*Diphtheria* was most apparent in East and West Flegg and in Docking Rural Districts, while not a single case was reported from the Thetford District.

*Enteric Fever*, otherwise known as Typhoid Fever, was most prevalent in Freebridge Lynn, King's Lynn Urban, Walsingham Rural, and Flegg Rural Districts, and the proximity of possible shellfish sources of disease cannot be overlooked in connection with all of these districts.

It might be objected that there were too few cases to justify a suspicion that any of them were due to contaminated shellfish, but this is illogical, because where layings are some considerable distance from a source of pollu-

tion, or where the amount of polluting material is relatively small in amount, it may easily occur that only a comparatively few shellfish become contaminated, the majority escaping dangerous pollution, and consequently being capable of being eaten without resulting in illness.

In Freebridge Lynn, however, I was definitely able to suggest that 8 of the 11 cases were probably secondary to a "missed" case which had been diagnosed as "Pneumonia"; and in King's Lynn 3 of the the 10 indigenous cases were stated to have some connection between them. In Lynn 2 cases, or 20 per cent., gave a history of the consumption of shellfish. In Walsingham there was a definite history of shellfish in 25 per cent. of the cases. In the Fleggs 5 of the 7 cases occurred at Ormesby, but no comment is offered by the Medical Officer of Health as to their origin or connection.

It is worthy of note that coincidently with the publicity given to the dangers of shellfish in this County in 1908 and 1909, the number of notifications of Typhoid Fever experienced the remarkable fall from an average of over 140 cases a year in 1907 and 1908 to only 50 in 1909. These things are soon forgotten, however, unless constantly kept to the front, and it is a matter for speculation as to what proportion of the additional 25 cases in 1910 might have been prevented had people exercised the same precautions in 1910 as were observed in 1909.

## SCARLET FEVER.

In *Cromer* 6 of the 7 cases were removed to the Isolation Hospital.

In *East Dereham* 8 cases out of 19 notified during the year occurred in two houses, no doctor having been called in for the first cases, which were of a mild character. Dr. Belding says:—"In many cases we were enabled to take action and prevent the spread of the disease by receiving information from the Schools that certain children were absent, and that there was a suspicion that they were suffering from infectious complaints. To avoid epidemics it is imperative that there should be cordial co-operation between the School Authority, the Medical Men practising in the town, and the Medical Officer of Health."

In *Downham Market* 12 cases were notified; 7 in November "of a very mild type, more resembling the so-called Fourth Disease than well-defined Scarlet Fever."



In *Diss* only 3 cases of Scarlet Fever were notified. In this town an anomalous epidemic of a non-fatal character was prevalent in June, the chief symptoms being sore throat with a rash. In consultation with Dr. Speirs, the District M.O.H., I diagnosed Dunn's Disease. So many children were affected that the Schools had to be closed for a time.

#### Amongst the Rural Districts

Dr. Back says for *Aylsham R.D.* that the type of the disease has been mild, that the amount of infection has been an average one, and that infection has rarely extended beyond a single household, and never to a serious extent.

In *Blofield* only 6 cases occurred, and 3 of these were in one family.

In *Depwade* 20 cases were notified.

In *Downham R.D.* there were a smaller number of notifications than in any year since 1900. Dr. Cross says:—"The majority were of a very mild type. There were only two groups of cases that could have any connection with each other. These occurred at Welney, where there were 6 cases; and at Stow Bridge, where 5 cases were notified. There can be little doubt that had hospital isolation been available 9 of these cases might not have occurred. Seven other cases were of a doubtful nature."

In *Docking R.D.* a small outbreak was checked through action following on a notification of a suspicious case from a School.

In *Erpingham* 20 cases were notified, "chiefly due to an outbreak at Bodham and at Beckham Workhouse, which was traced to 3 children who had sore throats, and had not been seen by a medical man. Their mother was nursed at this time by a woman who subsequently went into the workhouse. The children had continued to attend School, which accounted for further cases." All the children who were absent from School on account of sickness were visited by Dr. Richardson, the M.O.H., who isolated one family with a suspicious history of sore throat and rash.

In the *Fleggs District* there were 7 cases in Caister locality.

In *Forehoe R.D.* 9 cases were notified, including 4 in Wymondham, 2 in Marlingford, 2 in Wramplingham, and 1 in Bawburgh.

In *Henstead* 19 cases occurred in 9 parishes; 5 in Markshall were all in one house. Fortunately although 2 inmates were engaged at a dairy farm, and 1 contracted the disease, the precautions adopted prevented the spread of the disease.

In Poringland a child was excluded from School with peeling hands. Medical advice was obtained, and the Head Teacher's suspicion of Scarlet Fever confirmed.

Four cases occurred in Wreningham, the School being apparently the common source. Dr. Burton says: "On inspecting the School premises the cesspool, which is situate in the playground, was found full, the contents blocking up the drains. I made a special examination of the children in this School with Dr. Nash, the County M.O.H."

Three cases at Great Melton were also associated with insanitary environment, the nuisances being abated on discovery.

In *Loddon and Clavering*, where 11 cases were notified, 4 occurred in one house at Topcroft and 3 others in one house at Bedingham.

In *West Lynn* a youth of 17, employed in a second-hand furniture business, contracted the disease.

In *Marshland*, out of a total of 31 cases, 6 occurred in one family in West Walton, and 5 in one family in Nordelph.

In *Mitford and Launditch* 55 cases were notified from 15 villages. "28 cases were distinctly traceable to the Tittleshall epidemic referred to last year" (says Dr. Belding), "and as I then remarked, it was discussed whether we should prosecute certain individuals for culpable negligence, and perhaps rather unfortunately we decided not to.

"However, we did not make the same mistake again, but bringing some of the worst cases before the magistrates fines were inflicted, and the epidemic at once checked, for up to then cases were deliberately concealed, and our instructions ignored."

A localised epidemic at Reymerston was traced in the first instance to a child being moved from another district because there was a case of Scarlet Fever in the house.



In *Smallburgh*, of 24 cases notified, 12 in the Ludham Sub-District "were all part of the outbreak at Hickling, which began in 1909. Eleven cases in North Walsham Sub-District occurred at Witton and Ridlington in October, the source of the infection I was not able to trace."

In *Swaffham R.D.*, "the first of 3 cases at Sporle was recognised and notified by the School doctor, the other two cases subsequently occurred in the same family."

## DIPHTHERIA.

The lessened incidence and decreased mortality from this disease are possibly due to the enlightened action of the District Councils in providing for the payment of taking swabs for the bacteriological diagnosis of the disease and for the control of convalescence, as well as by the more extensive use of Diphtheria antitoxin as a remedial measure. The use of Diphtheria antitoxin in this way has been greatly facilitated by the Order of the Local Government Board, dated August 15th, 1910, which sanctions the provision by the Councils of County Boroughs, Urban Districts, and Rural Districts of a temporary supply of Diphtheria antitoxin and of medical attendance in connection therewith, the Order being made under Section 133 of the Public Health Act, 1875. In a covering circular the Local Government Board advised that each Council in considering the matter should take into special account the possible requirements of the Poor Law Medical Officers that they might be able to obtain from the store of the Council the antitoxin which they may require from time to time for use in connection with patients under their care. A caution is given that this free provision of Diphtheria antitoxin must not be regarded as a substitute for removal to hospital, nor as implying the relaxing of as efficient isolation as is possible to the satisfaction of the Medical Officer of Health.

It is satisfactory to note that an extended use of bacteriological aids to diagnosis has been coincident with a diminished number of notifications in the County as a whole, though one or two individual districts may apparently have had notifications through bacteriological aids which otherwise might not have been made.

A little consideration will however convince any unwarped mind that the discovery of the Diphtheria bacillus as the cause of an outbreak of sore throats which might not present the classical clinical signs of Diphtheria is of immense importance in preventing what might otherwise become in the course of a few weeks a virulent epidemic.

An instance of this nature is recorded in the Report of the M.O.H for Blofield, where 6 or 7 cases in a row of cottages at Braydestone would not have been clinically recognised as Diphtheria had not the bacteriological examination of swabs revealed the presence of Diphtheria germs.

In this district, as in many others, swabs sent by medical practitioners desiring bacteriological aid in the diagnosis of doubtful cases are examined and reported on at the cost of the District Council.

Dr. Back well remarks, in his Report to the *Aylsham* R.D.C., on the notifications which, as School Medical Officer, I instituted a year or two ago from Teachers to District Medical Officers of Health, as well as to the School Medical Officer. "The Reports of Head Teachers notifying sore throats among children attending School are of special value in giving information which often leads to the discovery of the existence of Diphtheria long before a notification under the Infectious Disease (Notification) Act reaches me."

The procedure recognised by the Aylsham Rural District Council with regard to the taking of swabs and the administration of antitoxin is clearly and admirably set out by Dr. Back as follows :—

1.—The District Council provides for bacteriological examination of swabs, free of expense, to medical men who may be in doubt as to the nature of any disease which possibly might be Diphtheria.

2.—The District Council provides for the bacteriological examination of the throats of all children known to have suffered from Diphtheria, so as to ensure their being free from infection before returning to School. A fee of 2s. 6d. is paid to the medical practitioner for taking the swab.

3.—Prophylactic injections of antitoxin are given by the medical practitioner attending the case at the discretion and by the direction of the Medical Officer of Health. For each prophylactic injection the practitioner is paid a fee of 5s., which includes the cost of the antitoxin.



4.—Curative injections of antitoxin are given at the discretion of the medical practitioner attending the case, and the actual cost of the antitoxin used is refunded by the District Council.

5.—It has not been found practicable to maintain a stock of antitoxin which would be within easy reach of all medical men practising in the district. It has, therefore, been thought better for each practitioner to provide antitoxin for his own use.

6.—The Medical Officer of Health makes use of the free examination of swabs when investigating outbreaks of Diphtheria. He receives no fees, and has no instructions to personally administer antitoxin, either as a prophylactic or curative agent.

In *Downham Rural District* Dr. Cross reports only 2 notifications of Diphtheria during the year. The sequel to the outbreak at Marham at the end of 1909 is thus stated by Dr. Cross: "When the School reopened in January the County Medical Officer of Health and myself were present and inspected the children. We only found it necessary to exclude 4 children whom on account of the history and condition of their throats we deemed it unadvisable to admit until a further bacteriological examination had been made. A final bacteriological examination was also made in all the cases that had been notified before they were allowed to return to School."

In *Depwade* 12 notifications of Diphtheria were recorded, but no deaths. Some of the cases notified were doubtful.

In *Docking* Rural District there were 24 notifications. In October cases occurred in Hunstanton, Dersingham, and Stanhoe. In the latter village attention was first called to the matter by notifications from Head Teachers on the Forms supplied by the Norfolk Education Committee. Concerted action with the School Medical Officer (who is also County Medical Officer of Health) resulted in the discovery of several cases of Diphtheria. The District Medical Officer of Health wrote to the doctors attending the affected families, who took charge of the patients and notified them. The School was closed.

A possible link in the chain is revealed by the following note by Dr. B. G. Sumpter, the District Medical Officer of Health. He says: "On November 7th I again visited the village in conjunction with the County

Medical Officer of Health, and he took swabs from two of the Governesses' throats; one of these was returned as suspicious, and she was detained." . . . Swabs taken on four occasions, between November 23rd and December 19th, were still reported suspicious. "In the meantime, acting on my advice, she had placed herself under medical treatment," and on December 24th a swab taken was free from suspicious bacilli. "The obstinacy of this condition is instructive, as the Governess had not, to our knowledge, had Diphtheria, yet all the time the secretions from her throat would be looked upon as dangerous."

Dr. Sumpter suggests that the lesson to be learned is that in cases of sore throat amongst School children the Head Teachers should do their utmost to induce parents to call in a doctor. "I think you will understand that it is impossible for me to visit every case of sore throat that is reported absent from School."

Under the Antitoxin Order of 1910 the Docking Rural District Council have taken the following steps:—They have authorised the free provision of prophylactic and remedial doses of Diphtheria antitoxin up to 1,000 units. They have also authorised the taking of swabs in suspicious cases, and before releasing School children who have been attacked with Diphtheria.

"An arrangement has been made with all the chemists in the district to stock antitoxin." Besides the ordinary disinfectants, Formamint lozenges were provided pretty generally in Stanhoe to any who had sore throats.

In *Erpingham R.D.*, where there were 19 notifications with only 1 death, Dr. Richardson remarks:—"The reduction in the mortality from this disease in recent years is no doubt largely due to the increased and extended use of bacteriological aids to diagnosis and the co-operation of the School Medical Service and Public Health Service."

The District Council has arranged for swabs for diagnosis and for convalescence.

In *East and West Flegg*, where co-operation between the County Medical Officer (as School Medical Officer) and the District Medical Officer was attended with the happiest results, Dr. Royden remarks:—"The District Council are certainly to be congratulated on the very business-like manner in



which they met the question of providing Diphtheria Antitoxin." Swabs are taken from all suspected cases and from children convalescing from the disease.

In *Forehoe R.D.* 5 cases occurred. In addition to other precautions, bacteriological examinations were made and antitoxin used.

A few cases in *Henstead* and *Freebridge Lynn R.D.'s* were thought by the District Medical Officers of Health to be due to defective sanitation.

In *Marshland*, arrangements were made for the supply of Diphtheria antitoxin for both treatment and prevention in necessitous cases.

In *Mitford and Launditch R.D.* 19 cases occurred with 1 death. The District M.O.H., Dr. D. Turner Belding has some interesting remarks to offer, and quotes from the reports of a predecessor who recognised School influences in Diphtheria epidemics, but was inclined to ascribe them to ill-ventilated schoolrooms and privies. Dr. Belding proceeds:—"The difference between then and now is the enormous reduction in the mortality due to the use of antitoxin, and the knowledge that every case was due to a pre-existing case, many of whom might attend school for weeks in a highly infectious condition, although they never had been laid up. In Shipdham and Gressenhall there were all the materials for a severe outbreak, but now, thanks to the appointment of a School Medical Officer, all the school children were inspected, and the throats of any that were in the least suspicious tested for the presence of Diphtheria bacillus. Thus infected children were detected and excluded from School, or the School closed, as was considered necessary. They were thus enabled to ascertain the presence of the Diphtheria germ in a School before an epidemic assumed serious proportions, and that was a step, and a big one, in the right direction; but before the system was complete it would be essential that all the children excluded should be put under proper medical treatment, not so much for their sakes as for the benefit of the community."

Dr. Belding suggests that all children excluded from School on account of infectious disease should be treated by the County Education Authority at the public expense.

Dr. Long, M.O.H. for *St. Faiths' R.D.C.*, comments on the administrative difficulties in connection with infectious diseases among children

attending Sprowston School, which stands just outside the boundary of the City of Norwich, but yet the majority of the children attending the School reside in what is now part of the City of Norwich. As School Medical Officer I had previously noted the same objections to dual authority in this School.

In *Walsingham Rural District* an opportunity of testing the working of a small Cottage Isolation Hospital in dealing with an outbreak of Diphtheria occurred at Swanton Novers in February, 1910. In a house with only 3 bedrooms, occupied by 2 adults and 8 children, 4 cases of Diphtheria occurring, were removed to a six-roomed cottage, situated well away from the village, and kindly placed at the disposal of the Rural District Council by Lord Hastings. Two "carrier" cases were also brought over from Stiffkey, were placed under the charge of a nurse, remaining there from February 6th to April 15th.

The expenditure incurred was as follows :—

				£	s.	d.
Nursing	..	..	..	19	18	7
Maintenance	..	..	..	21	2	11
Coals	..	..	..	2	12	3
Conveyances	..	..	..	4	19	0
Assistance and Labour	..	..	..	7	17	0
Furniture	..	..	..	11	17	1½
Disinfectants	..	..	..	3	15	6
Repairs	..	..	..	1	0	10
				<hr/>		
				£73	3	9½
				<hr/>		

The furniture being kept for future use after disinfection the other charges amounted to about £1 5s. per head per week. No further cases occurred, nor was the School closed, educational requirements being thus not interfered with.

Dr. Fisher says :—"The result was satisfactory in confining the outbreak entirely to the original centre, and I do not think the expenditure involved was at all excessive."

In *Wayland R.D.* the necessary arrangements were made for the supply of Diphtheria antitoxin, which is now available at Attleborough and Watton free for the use of the poorer inhabitants.



· SMALL POX.—Only one case occurred, and that was on a steamship arriving “foreign” at the Port of King’s Lynn.

The following is the Report of the Port Medical Officer :—

“A notification was received from Dartmouth, on January 26th. that the s/s Tregurno, from the Black Sea, was on her way to Lynn with a case of Small Pox on board.

“On her arrival in the Roads, on January 28th, I boarded her, and found that the 2nd engineer had a modified form of Small Pox. On the following day he was removed to the Small Pox Hospital, and the ship and also the crew were disinfected as far as practicable.

“Vaccination was offered to the crew, who declined. Men from Lynn were then allowed on board to lighten the vessel, after the captain had undertaken to keep the crew apart as much as he could, and had agreed not to allow the crew to go ashore when the ship had entered the docks, excepting those who wished to go straight to their homes, in which cases the M.O.H.’s of those districts were notified.

No other case occurred whilst the ship remained at Lynn, although the crew was frequently inspected, but on her arrival at Newport, Monmouthshire, the 1st mate was taken ill, and I heard from the M.O.H. of South Shields that the cook of the Tregurno had the disease in that town.

The Medical Practitioners in Lynn were privately notified and asked to be on their guard, but no more cases came under observation.”

PLAGUE.—This is a notifiable disease. The occurrence of a few cases of human plague (the pneumonic form) in East Suffolk in the autumn of 1910 made the disease one of anxious consideration for the Eastern Counties, especially when it was discovered that plague had invaded the “rat” population and other forms of rodents also.

Active measures were instituted by the Local Government Board, in conjunction with the East Suffolk County Council and various Sanitary Authorities.

I reported to the Norfolk County Public Health Committee, and some precautionary memoranda I had drawn up were ordered to be sent to the various Sanitary Authorities in the County. I also attended a Conference at Thetford summoned by Dr. R. J. Reece, a Medical Inspector of the Local

Government Board, and active measures were instituted by some of the local authorities for the destruction of rats. Happily no further human cases occurred in Suffolk, nor have I heard of any rats killed in Norfolk showing definite signs of Plague.

Our Port Sanitary Authorities are our first line of defence, and we largely depend on the administrative measures they employ to keep out Plague from this country.

MEASLES is a notifiable disease under the Notification Act in two or three Districts in the County. Of course the first step necessary for the successful prevention of disease is to obtain as early and accurate knowledge of its existence as is possible. Notification is therefore of greater use if it secures early notification of the earliest cases. But notification is practically useless until other administrative measures have been decided upon and arrangements made to render them effective in dealing with an outbreak.

Unless therefore heads of families realise their responsibility of notifying Measles (since it is the exception for a Doctor to be called in) as early as possible, and unless the Authority has well-organised administrative machinery for dealing with the disease, notification under the Notification Act is of little use, and when once the disease has become established in the absence of such organised measures it is more or less a needless and useless expense.

But *School* notification of Measles or suspected Measles has proved of the greatest advantage in dealing with, and sometimes in quite arresting, the spread of the disease. Because, by means of a School Measles Register, information is available which is of great value in dealing on scientific lines with an early outbreak. The machinery for this which I have instituted in Norfolk has proved very effective when early notification of a first case has been made by the Head Teacher. The Norfolk method was specially and appreciatively alluded to in the second Report of the Chief Medical Officer of the Board of Education, and since "imitation is the sincerest form of flattery," it may be mentioned that several Authorities have applied to me for details of the method, in order to adopt them in their own areas.

Prevention of disease by means of School notification is especially of importance in sparsely-populated Rural Districts where medical aid is not promptly obtained or (sometimes) easily obtainable.



WHOOPING COUGH.—I have commented on this distressing disease, so fatal to young infants, in previous Reports.

Fortunately, neither Measles nor Whooping Cough were in excessive prevalence during 1910. Measles accounted for 22 deaths, 18 in children under 5 (4 of these were under 1 year old). Whooping Cough accounted for 17 deaths, all under 5 (and 15 of them under 1 year).

The Zymotic death-rate per 1000 population for each of these diseases was—

Measles	..	..	·068
Whooping Cough		..	·053

It is interesting to compare these rates with the Zymotic death-rates among children under 1 year of age of the same diseases per 1000 infants born.

The figures thus obtained are for—

Measles	..	·57 and for	} per 1000 infants under 1 year of age.
Whooping Cough	2·14		

For persons over 5 years of age the Whooping Cough mortality was *nil*, and that of Measles almost *nil*—not more than ·01.

The following extract from the Report of the Medical Officer of Health to the Aylsham R.D. is of interest:—

“The two un-notifiable infectious diseases—Measles and Whooping Cough—which often alarmingly swell the lists of deaths among children, fortunately have been little in evidence during 1910. There were no deaths from Measles, and but one from Whooping Cough. To a large extent, no doubt, the freedom of the district from these two maladies may be due to the fact that a large number of children are at the present immune, having suffered from attacks in present epidemics, but there is now another influence controlling the spread of infectious disease among children. By the system lately introduced by the School Medical Officer, all suspected cases of infectious disease among children attending school are at once reported by the head teacher both to the School Medical Officer and to the District Medical Officer of Health. In this way Measles and Whooping Cough have practically become notifiable diseases, and therefore more or less under control. No difficulties have arisen with regard to the exact part to be

played by the School Medical Officer and myself in carrying out this important part of my work, and I am confident that the new arrangement will result in saving many lives of children, as well as a help in securing a better school attendance."

ABERRANT OR ANOMALOUS FORMS OF INFECTIOUS DISEASE.—Epidemic illness among school children showing the following characters occurred in different localities in Norfolk during 1910. The most widespread occurred in the Urban District of Diss necessitating closure of the Council Schools and National School in that town. The illness was of a mild nature, the symptoms being sore throat with rash—but with no severity of symptoms, and in only a few cases did desquamation occur. The nature of the outbreak was thought to be similar to that which occurred in Hertfordshire and Essex a few years ago which acquired the appellation of Dunn's Disease—but no aid was sought in Norfolk from bacteriological methods, partly because there is no County laboratory for the investigation of disease, and partly because the mildness of the outbreak did not appear to justify the expense of investigating it by the aid of outside laboratories. So mild was the disease, that apart from school notification, the District Medical Officer of Health would have been unaware of its extensive prevalence, for medical aid was rarely sought. There were no deaths or even severe cases.

This form of disease was fairly common throughout the County in 1910, and I saw similar outbreaks at East Tuddenham and in Wendling in consultation with Dr. Belding, the District M.O.H.; and Dr. E. G. Wales records a similar outbreak in Downham Market.

TUBERCULOSIS.—The Public Health (Tuberculosis) Regulations, 1908, provided for the notification of Pulmonary Tuberculosis occurring amongst the inmates of Poor Law institutions, or amongst persons under the care of District Medical Officers.

An Order known as the Public Health (Tuberculosis in Hospitals) Regulations, 1911, has recently been issued by the Local Government Board, extending the sphere over which the principle of compulsory notification shall act. These further Regulations provide for the notification of Pulmonary Tuberculosis occurring amongst the in-patients or out-patients at hospitals or



other institutions for the treatment of the sick, where such institution is supported entirely or partially otherwise than by contributions from patients (or relatives or guardians), and is not rate or State aided.

The Regulations came into force on May 1st, 1911, and must be enforced by every Council and their Officers. The duties of the Medical Officer of Health are defined.

One of the main objects of these Regulations is to learn in which localities the incidence of Pulmonary Tuberculosis is greatest, but the patient or any other person will not be liable to a penalty, or be subjected to any restriction, prohibition, or disability affecting himself or his employment, occupation, or means of livelihood, on the ground of his suffering from Pulmonary Tuberculosis. Further, the Order allows for the provision of appliances or apparatus which will enable patients sometimes to be treated at their homes under suitable sanitary conditions, or to continue treatment at home after a short educative stay at a Sanatorium.

The Royal Commission on Tuberculosis, which was established in 1901, has issued three Interim Reports. The original terms of reference were:--

- (1) To determine whether Tuberculosis in animals and man is one and the same disease ;
- (2) Whether animals and man can be reciprocally infected with it ; and
- (3) Under what conditions, if at all, transmission of the disease from animals to man takes place, and what are the circumstances favourable or unfavourable to its transmission.

The work and investigations of the Commission corroborate the opinion of Koch that the bacilli of bovine and human tubercle are distinct, but differ in a slight degree from his view as to the susceptibility of man to bovine Tuberculosis, it being proved that human tubercle bacilli are the chief cause of severe Tuberculosis in man, while he is susceptible to bovine bacilli generally only in a minor degree. It is, however, proved that bovine tubercle bacilli can occasionally produce severe Tuberculosis in children, leading even to a fatal issue. The necessity therefore for in no way relaxing attention to Tuberculosis in milch cows is obvious, cows' milk being the principal article of diet of young children for some time after weaning.

In the Administrative County of Norfolk the deaths of ten infants under one year of age were attributed to tuberculous diseases other than Phthisis. Tuberculosis of the Lungs, or Pulmonary Phthisis, is usually a manifestation of the disease at later stages of life than in young childhood, and is most usually due to direct infection by human tubercle bacilli from human sources, but other forms of Tuberculosis are more frequently due to infection by bovine bacilli, and there is little reason to doubt they are most frequently introduced into the young child's system in tubercle-infected milk from tuberculous cows.

The proportion of deaths of children under 5 years of age from Pulmonary Phthisis and from other tuberculous diseases, as compared with the deaths from these respective forms of Tuberculosis in persons over 5 years of age, is very instructive. Thus, in 1910, in the Administrative County the deaths at their age-periods were as follows:—

	Pulmonary Phthisis.	Other Tuberculous Diseases.
Under 5 years	7	22
Over 5 years	203	96

Altogether, 210 deaths were attributed to Pulmonary Phthisis or Tuberculosis of the Lungs, giving a *Phthisis* death rate of 0·65 per thousand population, while the *Tuberculosis* death rate (from all forms of Tuberculosis, *including* Pulmonary Phthisis) was 1·002, the death rate from other tuberculous disease being obviously the difference, or 0·36.

These figures compare favourably with those for England and Wales as a whole, which were as follows in 1909:—

	Phthisis Death Rate.	Other Tuberculous Diseases	Tuberculosis (All Forms).
England and Wales (1909)	1·08	0·44	1·52

In the Administrative County of Norfolk the highest Phthisis death-rates were noted in the Urban Areas of Walsoken, North Walsham and Wells, while no deaths occurred from Phthisis in Downham Market in 1910. Amongst the Rural Districts in 1910 the highest Phthisis death-rates occurred in St. Faiths and Forehoe, and the lowest in Downham Rural District (excepting West Lynn which has a very small population).



Whatever may be achieved by Sanatoria and Tuberculosis Dispensaries in curing or alleviating sufferers from Pulmonary Phthisis, we who are public health guardians are most interested as to what part they play or can be utilised for in the prevention of the spread of the disease to others as yet unaffected. Of course if a patient is cured, a formidable focus of infection is done away with to the public advantage, but short of this the chief public use of sanatoria and dispensaries is in the facilities which are available at such institutions to teach patients how to treat their sputa or other infective discharges so as to render them innocuous to other persons, including more particularly other members of their own households.

As we have seen, the Local Government Board is slowly extending compulsory notification, and arrangements are now in force for learning the chief foci of disease among those classes and dwellings where it is of the greatest assistance to have compulsory notification, and special powers are now given to District Councils, on the advice of their M.O.H., short of interfering with any hospital, to take the necessary measures of disinfection of articles and premises which have been used by the patient, and for the safe disposal or destruction of the infectious discharges of the patient; to supply reasonable assistance, facilities, and articles to diminish the risk of infection, and to appoint Health Visitors or other officers or otherwise to act and arrange as to give advice by such officer directly or by means of printed placards, leaflets, or handbills.

Amongst the M.O.H.'s Reports, that of *King's Lynn* (Dr. Kingdon) supplies a table which gives the number of deaths which have occurred in that Borough from Pulmonary Tuberculosis at stated age periods during the last 10 years.

This illustrates to some extent previous remarks of mine in this section, showing that in the whole 10 years (1901—1910) only 12 deaths occurred in children under 15 years of age, as compared with 178 deaths between the ages of 15 and 65 in the same period, 44 of these deaths occurring during the age period 15—25 years.

In *King's Lynn* there were in 1910 four notifications of Pulmonary Tuberculosis, 2 of which were voluntary and 2 pauper cases, under the Regulations of 1908, but 18 deaths from this disease were recorded during

the year, and obviously the proportion of notified cases is very small to the actual number of existing cases. The M.O.H. writes:—"As far as possible the rooms in which the patients have died have been disinfected when the occurrence has been brought to my notice."

In *Thetford Borough*, Dr. Harris, M.O.H., writes:—"Notification of Tuberculosis is confined to pauper cases. These are visited and instructions given; disinfectants and spitting bottles are supplied, and disinfection of the rooms carried out. There is no accommodation for cases of Pulmonary Tuberculosis in the town, except the Workhouse Infirmary. Two deaths from Phthisis occurred during the year."

Dr. Back reports for the *Aylsham R.D.*—"Under the Public Health (Tuberculosis) Regulations, 1908, I have received four notifications of 'poor persons' suffering from Pulmonary Tuberculosis. Two of these have since died. The usual precautions were taken in each case to limit the spread of the disease, viz., the patient was given a printed card of instructions and advice, a supply of Jeyes' Fluid, an aluminium spitting cup, and, when needed, a Crossley spitting cup. In case of death the room occupied by the patient has been disinfected."

In his Report for *Blofield R.D.* he alludes to the assistance of bacteriological investigation, which should, preferably, be obtainable in a County Laboratory under the supervision of the County Medical Officer of Health. He writes:—"The action taken, when occasion arises, under the Public Health (Tuberculosis) Regulations, 1908, was described in my last year's Annual Report. I would add that, in order that the disease may be recognised in its early stages, it would be an advantage if Poor Law Medical Officers were granted the help of a bacteriological examination of sputum at the cost of the Council."

*Deprwade R.D.* had 3 notifications.

*Downham R.D.* had 4 notifications.

One case was sent to Sandgate Sanatorium, and was subsequently admitted to Downham Union Workhouse. She returned home to die. Dr. Cross writes—"It was impossible to let her have a separate bedroom, but precautions were taken as far as possible, and the house and bedclothes were afterwards disinfected."



It is, I think, unfortunate that the patient returned home to die, for in the last stages the patient becomes indifferent to taking precautions as to spitting, and untutored relatives are more gravely exposed to infection than the nursing attendants and other patients would be in a workhouse infirmary.

In *Docking R.D.* 6 cases were notified, all of which died. The following interesting statement is made by Dr. Sumpter, M.O.H., which indicates strong common-sense on the part of this Officer and his Council, as well as public spirit on the part of Medical Practitioners in the District:—"Besides the precautions adopted in notified cases, on the request of their medical attendant, sanitary spittoons and disinfectants are supplied to non-notifiable cases amongst the poorer classes, and their rooms are disinfected after death."

In *Erpingham R.D.* there was 1 notification and 9 deaths. Dr. Richardson makes some pertinent remarks and extensive quotations.

In *E. and W. Flegg* 5 deaths were ascribed to Pulmonary Tuberculosis.

In *Forehoe R.D.* only 1 case was notified, but 15 deaths occurred in 1910.

In *Henstead R.D.* there were 7 deaths.

In *Loddon and Clavering R.D.* there were 9 deaths.

In *West Lynn R.D.* there were no deaths.

In *Freebridge Lynn R.D.* there were 9 deaths and 1 notification. The rooms were disinfected in each case.

In *Marshland R.D.* there were 3 deaths.

In *Mitford and Launditch R.D.* there were 11 deaths. Dr. Belding, M.O.H., says:—"Notification of Tuberculosis is voluntary and, as such, of very little use. I have advised the compulsory notification of all cases and the extension of the same facilities for diagnosis as in Diphtheria and Typhoid, namely, that materials should be supplied to all Medical Men for sending sputum to the Clinical Research Association. Of course this would be of little use unless we are prepared to carry out suitable treatment. My Council applied to the L.G.B. some years ago for powers to enforce compulsory notification, but were advised to adopt voluntary. The Inspector disinfects cases where deaths occur that we can obtain early notice of.

In *St. Faith's R.D.* there were 2 notifications and 14 deaths.

In *Smallburgh R.D.* there were 4 notifications and 10 deaths. Dr. Wright, M.O.H., remarks:—"Notification of this disease is only compulsory in pauper cases, but voluntary notification of other cases is not only asked but paid for. In spite of this there was only one case other than pauper notified last year. The deaths from this infectious disease numbered 10. I am sure if Practitioners would make their poorer patients understand the infectious nature of this disease, and if they would notify all their cases, in order that cards of instruction, and spit bottles, etc., might be supplied by the Sanitary Authorities to the sufferer, the spread of infection would thereby be greatly lessened. Notification of all cases of Pulmonary Tuberculosis, and disinfection after removal or death of these cases, should be compulsory."

In *Swaffham R.D.* there were 4 notifications and 3 deaths. "Each case was visited and instructions given as to the infectious nature of the disease, need of separate accommodation, and care to be exercised with regard to expectoration. Disinfection of the rooms occupied was carried out by the Inspector of Nuisances in those cases where death occurred."

In *Thetford R.D.* there were 4 deaths. (See remarks for Thetford Borough.)

In *Walsingham R.D.* there were 15 deaths and 3 pauper notifications. Dr. Fisher thinks it would be of advantage if disinfection was carried out after death in every case.

In *Wayland R.D.* there were 10 deaths and 2 notifications. (Same measures adopted as in Swaffham R.D.) Dr. Rose, M.O.H., urges both Councils to endeavour to have Pulmonary Tuberculosis added to the list of Notifiable Infectious Diseases, quoting from the official circular of the L.G.B.—"The more the general community is instructed regarding this disease, its prevention and hygienic treatment, the more the pressure of public opinion will be brought to bear against indiscriminate expectoration, overcrowding, and other evils of housing and occupation."

Among the Urban Districts, Cromer had 1 death, East Dereham 3 deaths, Diss 3 deaths, Sheringham 3 deaths, Walsoken 7 deaths, and Wells 4 deaths, from Pulmonary Tuberculosis.



CANCER.—76 deaths were attributed to Malignant Disease in the 12 Urban Districts, with an estimated total population of 60,580; and 321 deaths in the 20 Rural Districts, with an estimated total population of 260,290; giving for the Administrative County of Norfolk a total of 397 deaths in an estimated population of 320,870 persons in 1910, being a Cancer death rate of 1·23 for the County in 1910, as compared with 1·10 in 1909, 1·12 in 1908, and 1·16 in 1907.

The actual number of deaths attributed to Cancer in the Administrative County of Norfolk in these four years was as follows:—

	1907	1908	1909	1910
Rural Districts	300	286	284	321
Urban Districts	67	69	64	76

The statistics of the Registrar-General indicate a steady increase of Cancer in both sexes throughout the Kingdom since 1860.

His figures and diagrams show that in both sexes the greatest relative ~~relative~~ increase, and in the female sex the greatest absolute increase, has been that from Cancer of the intestines. Doubtless this is largely due to improved diagnosis.

“The increase amongst males from Cancer of the jaw, and especially of the tongue, is remarkable, and can scarcely be explained by improved diagnosis. . . . . The increase is entirely confined to the male sex.”

These facts afford much material for reflection in regard to our habits as to food and drink, and in men as to smoking. The effects of irritation, including those incidental to functional activity, are operative in predisposing towards Cancer.

Dr. Fisher, M.O.H. for Walsingham R.D., reports with regard to any special Cancer location that he is at present investigating a series of cases that have occurred in a row of four cottages, three cases in five years of different types. No exception can be taken to the situation of the cottages on high ground and gravelly soil.

Dr. Rose, M.O.H., Wayland R.D., reports that in 1910 he found that the mortality from Cancer of persons of 50 years of age and over was no less than 18 per cent.

VACCINATION.—This is a subject of considerable importance not only as regards the relative immunity of the individual and the community, but as to the amount of isolation-hospital accommodation available in the event of Small Pox appearing in epidemic form.

The Reports of the District Medical Officers of Health unfortunately indicate a steady increase in the percentage of unvaccinated children in the County.

Dr. Back in his Report to the Aylsham R.D. Council says:—"The records of Vaccination, which now for several years have appeared in my Annual Reports, show a steady and somewhat rapid increase in the number of children exempted under the 'Conscience Clause.' My experience is that in Rural Districts the profoundest ignorance exists with regard to Vaccination. Many parents consider the object of the operation is to strengthen the infant, and have no idea that it has anything to do with the prevention of Small Pox. 'Conscientious Objectors' are now, for the most part, ignorant persons who, under existing conditions, find it far less trouble to obtain the signature of a Magistrate than to nurse a baby with a vaccinated arm. The District is rapidly becoming a fertile field for the propagation of Small Pox, should the infection unhappily be introduced."

Dr. Rose reporting to the Wayland R.D. Council remarks:—"The unvaccinated infant population steadily increases. There were 270 births registered last year; of these, 173 were vaccinated and 56 exemptions were claimed, while 33 are still unaccounted for, but no doubt there will be further exemptions among these. Among the labouring population there is an apparently increasing proportion whose ignorance of the proved benefits, and whose credulity as to the alleged ill-effects of Vaccination, can only be realised by personal experience. I do not suppose that public attention will be forced to this matter and the increasing defenceless of the population against this disease recognised until Small Pox is again introduced into the District."

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## Isolation Hospitals.

With the exception of some sort of provision, in the shape of small wood and iron erections, in the event of an outbreak of Small Pox, isolation hospital accommodation does not exist, or is not utilised, in the greater part of Norfolk.

The only Districts which really possess isolation hospitals for Fever cases (apart from Small Pox) are the Urban Districts of King's Lynn, Cromer and New Hunstanton, while the Urban District of Walsoken appears to have the command of a few beds at the Wisbech (Cambs.) Isolation Hospital.

It is obvious, therefore, that as a whole the County is not satisfactorily provided with isolation hospitals.

To encourage the provision of satisfactory hospitals with efficient administration the Isolation Hospital Act of 1893 gives power to the County Council to make annual grants towards satisfactory hospitals.

Instances occur from time to time where, owing to the lack of isolation hospital accommodation, infectious diseases spread and deaths occur which might have been prevented had isolation hospital accommodation been available for the first case or cases. Multiple cases in families are common, it being generally impossible to secure protective isolation in a cottage.

The Urban Districts being small and the Rural Districts sparsely populated, it would seem that two or three hospitals to serve combined Rural and Urban Districts would probably meet the necessities of the situation at a minimum cost to each Sanitary Authority.

For instance, Erpingham Rural, parts of Aylsham Rural and Walsingham Union, and Sheringham Urban Authorities might combine, and if satisfactory arrangements could be made with Cromer Urban Council, the present isolation hospital belonging to that Authority (which is situated in the Erpingham Rural District) might form the nucleus of a larger isolation hospital, sufficient to meet the needs of all the Districts, and to effect the isolation and treatment of two or three infectious diseases at the same time.

It is the *first* cases that especially require isolation to avert spread of infectious disease. In towns the usual amount of provision of isolation is one bed per 1000 inhabitants. In Rural Districts one per 3000 would usually be sufficient.

Isolation is a matter of common sense, and Dr. Thresh, who has been misunderstood and misquoted, has recently written again on the subject of isolation hospitals for Rural Districts, distinctly agreeing that in every District occasions occur in which it is in the public interest that a hospital should be in readiness to receive cases, and he instances cases of infectious disease occurring in (1) an overcrowded house, (2) in a house where an occupant or occupants will not be allowed to follow their usual occupations as long as the house is infected, (3) in a house where there is no one who can attend to the patient, and (4) in a house (such as a farm or dairy) where food is prepared or sold.

There is no District in which such conditions do not occur. Indeed, there are few villages where such cases may not occur.

Let it be granted that each District does not need to build and keep up an expensive hospital, still as I suggested in 1908, and again in 1909, cottages in certain areas should be reserved, which could be occupied by a couple without children, or by a respectable woman, who would keep certain rooms ready for immediate use. Dr. Thresh in his recent communication commends very much the same procedure.

Pending the consideration of the provision of joint hospitals for several Districts, as suggested in my Annual Report for 1909, District Councils would, I think, be wise to make some such provision as I advocated in 1908 for groups of adjoining villages, especially where the housing accommodation is limited and the bedroom accommodation generally insufficient to admit of any adequate home isolation.

Dr. Thresh well says:—"The better the housing the less the need for hospitals in country districts, but, unfortunately, in no district are the housing or other conditions such that an isolation hospital can be said to be unnecessary."



As stated above, in the Administrative County of Norfolk very little provision has been made for the hospital isolation of infectious diseases. The health resorts of Cromer and Hunstanton have each a brick isolation building for the purpose, Cromer having also an administrative block and a laundry block, with mortuary and disinfector, the total cost having been £3,876 10s. 1d. Among the Rural Districts the Forehoe R.D.C. utilises a brick-built cottage at Wicklewood. Six Rural Districts have wood-and-iron hospitals available in case of an outbreak of Small Pox, two of them being joint hospitals with the Swaffham and Thetford Urban Districts respectively.

The following references to isolation hospital accommodation occur among the District Medical Officers of Health Reports for 1910:—

*Cromer U.D.*—Nine Scarlet Fever patients treated in the hospital, the average duration of stay being forty-one days. One case was admitted by special leave from Sheringham. A fire at the laundry induced the Medical Officer to point out the necessity for telephonic communication between the hospital and the town, the hospital being situated a few miles from the town.

*King's Lynn M.B.*—The Infectious Disease Hospital in Hardwick Road was renovated in 1909, and is capable of receiving twelve patients in two wards.

It is not stated whether the hospital was utilised during the year.

*King's Lynn Port S.A.*—A case of Small Pox from a.s.s. from the Black Sea was removed to the Small Pox Hospital. “The Port Sanitary Hospital is in excellent order.”

*Wisbech Port S.A.*—The Port Isolation Hospital “is well kept and ready for use; the Caretakers are capable people.”

*Mitford and Launditch R.D.*—“There is no isolation hospital; or an extensive sparsely-populated District like this the expense of maintaining and transporting the infected would be out of all proportion to the benefits. If there were a fund to draw on for hiring a cottage and nursing the sick in suitable cases it would meet the case much better and be much cheaper.”

I may say in reference to Dr. Belding's remarks that the late Sir Richard Thorne-Thorne pointed out that the provision for isolating infectious cases is best carried out with deliberation in non-epidemic times, and this is illustrated by Dr. Belding's next sentence:—"The difficulty now is whether the District Council or Guardians are responsible, and while we are waiting for meetings and the inevitable discussions, *the time for prompt and efficient action is past.*" (The italics are mine.—J. T. C. N.)

*Marshland R.D.*—"Had isolation accommodation been available a number of the cases of Scarlet Fever might have been prevented."

*Docking R.D.*—An isolation hospital "would have been useful at Stanhoe."

*Downham R.D.*—"The County Medical Officer of Health in his last Annual Report has suggested two or three Fever Hospitals for the County. This I consider by far the most feasible proposition. There would be very little difficulty in moving a case from any part of this District to somewhere between Swaffham and Dereham, providing the hospital sent a motor ambulance."

Quite recently the Medical Officers of Health of the Walsingham R.D. and of the Loddon and Clavering R.D. have emphatically expressed the needs of their Districts for isolation hospital accommodation.

Under the Isolation Hospitals Act, 1893, County Councils are empowered to constitute hospital districts, consisting in each case either of a single local area or of two or more local areas as defined by Section 26 of that Act, as amended by Section 6 of the Isolation Hospitals Act, 1901. Appeal from a local authority concerned is provided for, and the Local Government Board may confirm, disallow, or modify the order of the County Council as they think fit.

I quite recognise that the problem of proper isolation hospital accommodation in a large and sparsely populated County like Norfolk is by no means an easy one to solve, but, as I have pointed out in previous Reports, in these days of motor ambulances it is not impossible of solution to secure what I consider an essential, viz., a properly administered hospital for infectious diseases, with a resident staff, to do duty for a large area.



## Midwives Act.

The Inspector of Midwives reports 127 Midwives working in the County. About ten per cent. cannot read or write, and their case books and registers are written by a relative, to their dictation. All are reported to use a thermometer, the Inspector of Midwives having instructed more than half the practising Midwives in its use.

1,407, or 20 per cent. of the 6,996 births registered in the Administrative County were attended by registered Midwives. There were 92 notifications of sending for medical help. Only one death of a lying-in woman was recorded, but no fewer than 36 still-births were notified, and in addition the deaths of 8 prematurely-born infants were recorded.

Only one case of Puerperal Fever occurred where a registered Midwife was solely responsible.

Three Midwives whilst working as " Nurse " in connection with septic cases were suspended from practice for short periods.

Disinfection is provided by the District Sanitary Authorities on notification to the District Medical Officer of Health, who is empowered to take such action as he is legally authorised to take for preventing the spread of Puerperal Fever.

The case of one Midwife, after local enquiry as to her conduct, was referred to the Central Midwives Board.

Three prosecutions were instituted under Section 1 (2) of the Act. Twelve cautions were given to uncertified women. Only one case of Ophthalmia among the newly-born was recorded—the Inspector of Midwives having carefully instructed the Midwives as to the necessary precautionary measures, as well as generally in the care and feeding of infants, the latter being utilised in pamphlet form.

## Administration of Food and Drugs Acts.

The County Council employs three Sampling Officers, who are also Inspectors of Weights and Measures. Each has a separate District and is responsible for his own District. They attend the Meetings of the Public Health Committee. The County Analyst also attends. As a result of his analyses the County Analyst roughly divides the samples into three classes—(1) Genuine, (2) Unsatisfactory, (3) Adulterated. Prosecution is not recommended in samples coming under class 2 where the deficiency is but slight, though occasionally the Vendors are cautioned. A Sub-Committee of the Public Health Committee deals with the certificates, and orders cautions or prosecutions. Occasionally the County Medical Officer of Health is consulted, and the County Analyst is good enough to send him copies of all certificates where adulteration has been found. When prosecution has been ordered, the Inspectors as a rule take proceedings, but occasionally a Solicitor (the Deputy Clerk) does so, and the County Medical Officer occasionally gives evidence.

The County Council administers the Food and Drugs Acts for the whole Administrative County, with the exception of King's Lynn Municipal Borough, which has a separate Quarter Sessions and deals with its own Food and Drugs.

In the Administrative County informal samples are taken only by special authorisation. The Police are very useful in giving the Inspectors local knowledge. The Municipal Borough of Thetford takes a few samples through its own Inspector of Nuisances, for examination at its own expense.

The Annual Report of the County Analyst for the year shows that of 161 samples of Milk submitted 26 were distinctly adulterated and 5 others unsatisfactory, making a total of nearly 20 per cent. of unsatisfactory samples of Milk. Of 3 samples of Cream examined, 1 was adulterated. Of 29 samples of Butter, 1 was adulterated.

Amongst Drugs, 2 samples of Sweet Spirit of Nitre and 1 of Orange Quinine Wine were all found adulterated.

Including the above, a grand total of 308 samples were analysed during the year, showing a percentage of adulteration of 10·7 per cent.



I am indebted to Messrs. Robinson, Ryley, and Barry, the Inspectors under the Food and Drugs Acts for the Eastern, Western, and Central Divisions of the County, for the following Return of Prosecutions ordered by the Public Health Committee in 1910 in connection with adulterated samples, together with the results of prosecution—fines being differentiated from costs.

## RESULTS OF PROSECUTIONS ORDERED BY PUBLIC HEALTH COMMITTEE, 1910.

*Nature of Sample.      Nature of Adulteration.      Results of Prosecution.*

### EASTERN DIVISION, Inspector A. ROBINSON—

Suet	..	100 ‰	Cocoanut Oil	*Dismissed on a side issue
Butter	..	25 „	Foreign Fat	£5 Fine
Milk	..	72 „	deficient in fat	10/- „
Milk	..	11 „	„ „	8/- „
Milk	..	30 „	„ „	15/9 „
Milk	..	16 „	„ „	8/3 „
Cream	..	36·4 grains	Boric Acid to 1 lb.	2/6 „
Milk	..	10 ‰	deficient in fat	2/6 „
Milk	..	16 „	„ „	2/6 „
Suet	..	100 „	Cocoanut Oil	£1 10/- „

### CENTRAL DIVISION, Inspector JOHN RYLEY—

Raisin Wine		2·84 grs.	Salicylic Acid per pint	Dismissed
Ginger Wine		3·5 „	„ „ „ „	„
Ginger Wine		10·5 „	„ „ „ „	1/- fine, costs remitted
Milk	..	11 ‰	deficient in fat	10/- costs and 10/- fine
Milk	..	12 $\frac{3}{4}$ „	added water	22/- „ 2/6 „
Milk	..	20 $\frac{3}{4}$ „	„ „	13/8 „ £2 „

WESTERN DIVISION, Inspector W. B. BARRY—

Milk	..	9 °/° deficient in fat	Dismissed	
Milk	..	19 „ „ „	10/-	costs and £1 fine
Milk	..	13 „ „ „	10/-	„ 11/- „
Milk	..	15 „ „ „	10/-	„ 11/- „
Milk	..	29 „ „ „	10/-	„ 6d. „
Milk	..	19 „ added water	10/-	„ £1 „
Milk	..	·004 „ Formaldehyde	‡£1 1/6	„ £5 „
Sweet Spirit of Nitre	59	„ defic. in Ethyl Nitrite	10/-	„ 5/- „

\* This case was submitted to Counsel, who was of opinion there were good grounds for a successful appeal.

‡ The County Medical Officer of Health attended the Court, the prosecution being conducted by the County Council's Solicitor, Mr. Hugh Davies.

In addition, one prosecution for added Salicylic Acid to Ginger Wine was withdrawn, and another for added Salicylic Acid to Cherry Brandy was dismissed; while, owing to illness, the Inspector was too late in issuing summonses in connection with two samples of Milk.

Speaking generally, the amounts of fines in cases of abstracted fat or added water to Milk appear to be inadequate, and hardly likely to serve the purpose of restraining fraud.



## Water Supplies.

Dr. Back in his Report to the Blofield R.D.C. draws attention to what he deems the entire disregard of Section 6 of the Public Health (Water) Act, 1878.

This Section requires, under penalty, that “the owner of any newly-erected dwelling-house shall not permit it to be occupied until a certificate has been obtained from the Sanitary Authority, that there is within a reasonable distance of the house an available supply of wholesome water sufficient for the consumption and use for domestic purposes of the inmates of the house.” Such certificate would naturally be based upon the report of the Medical-Officer of Health or of the Sanitary Inspector. No doubt this Section was intended to prevent houses being built in situations where they cannot be provided with water—but there is always room for dialectic skill as to what is “within a ‘reasonable’ distance of a house,” and what is “an available supply of wholesome water,” and what is sufficient for consumption and domestic use. The Public Health Act, 1875, Section 62, gives the Sanitary Authority power to require houses which are without a proper water supply to be so supplied if it can be furnished at a cost not exceeding the water-rate authorised by any local Act, or twopence a week, *or such other cost as the Local Government Board may, upon application, determine to be reasonable.*

Generally it is the duty of the Sanitary Authority to provide their district with water where danger exists to the health of the inhabitants from either the unwholesomeness or the insufficiency of the existing supply, and a proper supply can be obtained *at reasonable cost*. If neither the Sanitary Authority nor the owner can provide water at a reasonable cost, then if the absence of a proper water supply creates a nuisance so that the house is unfit for habitation, Section 97 of the Public Health Act, 1875, provides for steps to be taken to obtain a justices’ order prohibiting its being so used for human habitation.

Under Section 3 of the Public Health (Water) Act, 1878, it is the duty of every Local Authority to provide or require the provision of sufficient water supply to every occupied house within their district. The Housing

and Town Planning Act, 1909, requires the systematic inspection of houses, and cases which have hitherto evaded legal requirements in this respect may now be discovered and dealt with either by the S.A. requiring the owner, subject to appeal to the Local Government Board to provide a suitable supply within a specified time, or in case of default may themselves carry out the necessary work at his expense, or if the absence of a proper water supply cannot be made good at reasonable cost, then where a nuisance exists appropriate remedy can be obtained under the Nuisance Sections of the Act of 1875. The proviso to Section 3 of the P.H. (Water) Act should be borne in mind.

Reference to the Summary of the Reports of the District Medical Officers of Health show that most of the Urban Sanitary Districts have, generally speaking, admirable public water supplies, viz., King's Lynn, Thetford, Cromer, East Dereham, Downham Market, New Hunstanton, Sheringham, Swaffham, North Walsham, and Walsoken, while Diss is endeavouring to tap a satisfactory subterranean supply, and Wells-next-the-Sea still depends on private wells.

Amongst the Rural Districts Downham, Erpingham, and Marshland have certain villages which lie in the route of the mains of the Wisbech Water Company and of the Cromer Supply, thus enjoying the advantages of a public supply; but, generally speaking, the Rural Districts are without public water supplies, and are for the most part dependent on shallow wells, which are often so situated as to render the water supply of doubtful, or more than doubtful quality. In parts of certain Rural Districts the only available supply is from rain-water, but naturally any such parts are very sparsely populated, as it is quite impracticable for the Rural District Council to provide them with an adequate water supply.

Some of the villages on the banks of rivers derive their water supply from the river. This form of supply is also frequently of doubtful character, and may give rise to disease.

In the Depwade R.D. the M.O.H. reports that there is still no public water service in the District. Artesian wells are utilised by factories, maltings, and the larger houses. The major portion of the drinking water is



drawn from shallow wells. Dr. Robinson says:—"The scattered distribution of cottages forming a village or parish makes it difficult to provide a common supply for the use of the inhabitants, therefore many cottagers have to depend on ponds and ditches for their supply, and as many of these are unprotected it is not to be wondered at that cases of tape-worm and other parasitic lesions are found amongst the inhabitants."

In the Freebridge Lynn District a new public well has been constructed at Great Massingham.

At Lenwade in St. Faith's District, after considering ways and means, nothing better seems to be agreed upon than a system of scavenging in the hope of reducing the pollution of the wells.

In the Thetford Rural District the water supplies at East Harling are condemned by the Medical Officer of Health, who advises closure of the wells where water is condemned.

In Walsingham 32 samples of water were taken from wells, of which 12 samples were found contaminated.

The following interesting paragraph appears in the Report of the Medical Officer of Health for Mitford and Launditch Rural District—which he records has practically throughout its extent a thick stratum of boulder clay resting on chalk, the chalk rising to the surface at Guist and other places. In the higher parts there is a layer of plateau gravel on the clay, and in the neighbourhood of the streams alluvial deposit. Many of the deposits of plateau gravel are capped with a layer of brick earth or clay.

"This has a most important bearing on the water supply of the district. There is no public water supply in any part, but private wells are universal. These wells are in nearly all cases of the shallow surface type sunk into the clay, so that the water falling in the neighbourhood settles in them. From my observations and analyses since I have been M.O.H., I am convinced that there is a steady deterioration of the water in these wells, and the reason is not far to seek. Many years ago it was the custom to utilise every ditch, stream, or watercourse as a receptacle for all slops and refuse, and

it was quite a common thing for the privy to be built over a stream ; thus the streams were generally polluted, but sewage matter was removed from the premises. The first step in sanitation was to improve the appearance of the district, and to this purpose privies and cesspools were constructed. These were seldom or never made watertight, and so what had previously polluted the air and stream now polluted the subsoil. These privies and cesspools were often constructed with no regard to the position of the wells. For several years, wherever possible, substitution of pail closets for privies had been made, but unless there is a total abolition of privies and cesspools in the villages the time must come when, in a district like this, there will have to be a common water supply."

The M.O.H. for Cromer reports the water supply derived from deep wells as sufficient in quantity and wholesome. A considerable amount of oxide of iron deposits on exposure to the air, which has required the consideration of the Council as to the practicability of removing this by filtration.

Dr. Cross, M.O.H. for Downham R.D., makes a full report on the water supply, from which I cull the following ;—

"In the lowland portion of the district there are no wells, and the inhabitants, where there is no possibility of obtaining the Marham water, rely upon rain water collected in cisterns or tanks. When this supply fails they have recourse to river or ditch water. Many of the houses have tiled roofs, which at times render the water in the tanks very unfit. The County Medical Officer of Health recommends that a Roberts Separator would be useful in purifying the water collected from the roofs.

"None of the water in the district is plumbo solvent.

"With the exception of the Fen portion of the district there has been no shortage of water during the past year.



“In my last Annual Report I drew your attention to the necessity of reopening negotiations with the Wisbech Water Works Company to extend their main from Magdalen to Nordelph. I was very anxious that this should be carried out, and on making a house-to-house visitation I found that nearly all the inhabitants were anxious to have the Marham water. I attended a meeting of the Parish Council which was largely attended, over seventy of the principal householders being present. A unanimous vote was passed asking your Council to give the guarantee required. It was thought that a special rate could be levied on that portion of the Parish interested, and your Council was prepared to carry this out subject to the sanction of the Local Government Board. The negotiations with the Wisbech Water Works Company were satisfactorily concluded, and preparations for the commencement of pipes were made when we received the following reply from the Local Government Board :—

“Sir,

“I am directed by the Local Government Board to advert to your letters of the 4th ultimo and 19th instant with reference to the proposal of the Rural District Council of Downham that a portion of the Parish of Stow Bardolph should be constituted a special drainage district for the purpose of charging thereon exclusively any sums which the Council may be called upon to pay to the Wisbech Water Works Company in respect of a supply of water to the area in question.

“I am to point out, in reply, that the Public Health Act, 1875, contemplated that in all ordinary cases the Civil parish shall, in Rural Districts, be the area upon which special expenses incurred in respect of it shall be charged, and that when an area is formed into a special Drainage District it becomes a separate contributory place for all the purposes of the Public Health Acts.

“It is contrary to the general practice of the Board to entertain applications for their approval of the constitution of Special Drainage Districts where the sole object to be achieved is to limit the area proposed to be charged with the cost of providing a supply of water,

and in the present case it has not been shown that there are any such exceptional circumstances as would justify the Board in departing from their practice.

“The Board do not gather from the information furnished how the rest of the Parish of Stow Bardolph is at present supplied with water, or whether that supply is sufficient and satisfactory.

“I am, Sir,

“Your obedient servant,

“(Signed) J. S. DAVY,  
Assistant Secretary.”

“This reply placed the Council in a very difficult position, and it was necessary that some immediate steps should be taken, otherwise the whole question would have been dropped, and it is doubtful whether the Wisbech Water Works Company would have entertained the idea again. Together with your Clerk, I called a meeting of a few of the principal ratepayers in the Parish, and, thanks to their generosity, the £200 required was privately guaranteed.

“The work of laying the pipes was immediately commenced, and in six weeks was finished. I understand there are 140 houses out of 160 now supplied with the water.”

Further details of the public water supplies in the County were given in the Annual Report of the County Medical Officer for the year 1908.

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## Pollution of Streams within the County.

It is by no means uncommon to find breaches of the provisions of the Rivers Pollution Prevention Act, 1876.

By this Act are prohibited :—

(1) The discharge into any stream of solid refuse of any manufactory or quarry, or any rubbish, cinders, waste, or putrid solid body.

(2) The discharge of solid or liquid sewage matter, unless the best practicable and available means have been adopted to render harmless such matters.

(3) The discharge of any poisonous, noxious, or polluting liquid from any manufactory, with the same proviso.

(4) The discharge of any solid or liquid matter from any mine with the same proviso.

Legal proceedings to enforce the Act can be taken by a Sanitary Authority, the consent of the Local Government Board being, however, requisite in the case of manufactories and mines. The Board would consider the industrial interests involved and the circumstances and requirements of the locality before giving or withholding consent.

Any aggrieved person may apply to the Local Government Board if a Sanitary Authority declines to initiate proceedings.

Where any sewage matter falls or flows or is carried into any stream after passing through or along a channel which is vested in a Sanitary Authority, by the Rivers Pollution Prevention Act, 1893, such Sanitary Authority shall for the purposes of the Act of 1876 be deemed to knowingly permit the sewage matter so to fall, flow, or be carried.

In connection with specific instances which I have brought before the County Council from time to time, the following extracts from the District Medical Officers' Reports are interesting :—

*East Dereham.*—"Good progress is being made with the extensions at the Sewage Works, and another circular filter is being constructed."

*Downham Market.*—"The arrangements and conditions of the town sewerage remain exactly as heretofore, though much work has been done by your Council and officials in scheming for improvement. The existing arrangement of sewers and disposal (viz. untreated into St. John's Eau) has given rise to no particular difficulty, nuisance, or illness that I am aware of during the past year; it is their potential power to do so that we have to beware of. It is obvious that any random system of open sewers, or open ditches casually conveying the sewage, accessible to both children and cows in some portion of their length, and liable to cause nuisance and smells to neighbouring houses and footpaths, are a constant source of possible danger, and a source which tends to increase as the water carriage system of house drainage becomes more general, as it is doing with our improved water supply. We must also forcibly bear in mind that if any serious epidemic occurred clearly traceable to our open sewer system and pollution of water caused thereby, it is upon the Sanitary Authority that a grave responsibility rests. Far from wishing to see this district saddled with an elaborate and expensive sewage scheme, I am only anxious to see the Sanitary Authority (your Council) safe as regards this responsibility; and the simplest method by which this can be effectually done is the one we must all hope to see arrived at. From a sanitary point of view the simple method of piping the open sewers in such portions as they are accessible or dangerous would satisfy me and was the method by which I proposed to overcome our original difficulties some years ago, but now we are faced with another and much larger question; our sewage has for generations found its way into St. John's Eau by two outlets, the amount has increased and now we are requested by those in authority over that stream to prevent this pollution, and thus in having to arrange for the collection and purification of the sewage the great difficulty and expense arises. Messrs. Elliott & Brown, of Nottingham, the engineers concerned prepared a second scheme to effect this, which was the subject of a Local Government Board Inquiry on October 6th, the matter is still sub-judice, but to those present the difficulties both legal and otherwise appear considerable. There is little doubt that further discussion and conference



with various authorities concerned is needed before a satisfactory solution can be found."

*Thetford M.B.*—"With regard to the question of sewerage and drainage of the town, the new sewer in the Pike Lane area has been completed and connected with the house slop drains, and the two outfalls provided with a system of filtration. I regret to say, however, that the process of filtration is not working satisfactorily, and in this opinion I am supported by Dr. Nash, the County Medical Officer of Health."

*Aylsham R.D.*—"In my Annual Report for 1909 I referred to an inspection made by myself of the sources of pollution of the river Bure as it passes through the village of Coltishall. A certain number of these have already been cut off, and the remainder are at the present time engaging the attention of the Inspector and myself. I rely with confidence on the support of the Council in carrying through this important work."

*Downham R.D.*—"In my last Annual Report I referred to the pollution of the River Ouse, more especially at the Ten Mile Bank Pumping Station. I pointed out that the Ely Rural District Council denied that the sewage from Littleport could have access to the river at this point. In a Report by one of the Inspectors of the Local Government Board on the Sanitary Administration of that District it is shown that such pollution is possible, and it further states that the Ouse 'receives the drainage from a considerable population elsewhere.'

"Owing to the drain which leads to the Pumping Station having been cleaned out there have not been any complaints during the past year, but unless the discharge of sewage is stopped there will always remain a strong menace to the public health at the Ten Mile Bank. One case of Enteric Fever occurred on the Bank and the river water had been used for drinking.

"The river Wissey is polluted by the sewers at Stoke Ferry and Hilgay. This is referred to elsewhere. The St. John's Eau is polluted by the Downham Sewage, but since most of the houses in Downham West are supplied with Marham Water there is not so much cause for anxiety as formerly."

*Forehoe R.D.*.—"In both Wymondham and Hingham the old barrel drains constructed some half-century since for the purpose of carrying off surface water now receive the greater portion of the sewerage. Those in Wymondham discharge their contents ultimately into the river, and in Hingham into open ditches."

*Mitford and Launditch R.D.*.—"There is no proper system of sewerage in any part of the district. The workhouse drainage has been put in a much more satisfactory condition, but the whole of the roof water going into the sewers puts a great strain on the works during heavy rains."

*Smallburgh R.D.*.—"A scheme for the efficient drainage of Horning, where there is doubtless some pollution of the river Bure, was brought before the Sanitary Authority by the Yarmouth Water Works Company."

*Walsingham R.D.*.—"The pollution of the river Wensum at Fakenham will still continue until the sewage scheme is completed. The untreated sewage from Stiffkey runs into the river, but at a point very close to the sea, with no dwelling-houses intervening."

It is opportune in my Report as County Medical Officer of Health to remind Authorities that under Section 14 of the Local Government (England and Wales) Act, 1888, the County Council is enabled to institute proceedings under the Rivers Pollution Prevention Act in all cases in which that could be done by a Sanitary Authority, and of course they are able to institute proceedings against any Sanitary Authority in respect of sewage pollution.

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## Sanitary Inspection.

Separate Reports, for the most part tabular statements, are made by the Inspectors of Nuisances for King's Lynn Borough and Cromer Urban District, and Docking, Downham, Erpingham, E. and W. Flegg, Henstead, Loddon and Clavering, St. Faith's, Smallburgh, and Walsingham Rural Districts, while Abstracts of Sanitary work done are included in the Reports of the Medical Officers of Health for Forehoe, Swaffham, and Wayland Rural Districts.

In *King's Lynn* systematic inspection is carried out by the Inspector, he being occasionally joined by the Medical Officer of Health.

The Model Regulations issued by the L.G.B. in reference to Dairies and Cowsheds have been adopted. 5 notices were served to enforce lime-washing; 565 nuisances were dealt with; 11 statutory notices issued; and 19 summonses taken out.

In *Cromer* a general inspection of Dairies and Workshops was made conjointly by the Inspector and Medical Officer of Health. 43 Workshops and 3 Workplaces are registered. There are also 6 Dairies and 3 Cowsheds on the register, which are under systematic inspection.

In *Downham R.D.* a detailed report of an inspection of Hilgay village was submitted.

In *Erpingham R.D.* a decided improvement is noted in the condition of Dairies, Milkshops, and Cowsheds. Special inquiry was made in reference to some cottage property in Briston, and the serious defects were remedied.

(Further details are given under other Sections.)

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## Special Nuisances.

A very serious nuisance was caused by the deposit of house refuse by the City of Norwich on the Whitlingham Marshes near Postwick Grove. In April, 1910, complaints were made to me as County Medical Officer of Health, and I immediately communicated with the District Medical Officer of Health for Henstead R.D., in whose area the nuisance existed, and with the Medical Officer of Health for Norwich, asking the latter, if possible, to have the necessary steps taken to prevent the filth of Norwich being deposited at Whitlingham, and drawing the attention of the former to the serious complaints of a gross nuisance within the boundaries of the Henstead Rural District.

The position was complicated by the fact that the huge and daily increasing mass of putrefying house and trade refuse was deposited within a short distance of the Norwich Sewage Farm, whence obnoxious odours have frequently given rise to complaint. The smell from the Sewage Farm has apparently been greatly increased since the Travis system has been installed, owing to the difficulty which has been experienced in burying the thin sludge removed from the tanks, which has already begun to putrefy when removed from the tanks for burial. This sludge was at one time run by gravity to lagoons of large dimensions, whence a sickening smell of penetrating offensiveness polluted the air for a considerable distance, especially when there was but little wind. (It is now run to narrow trenches, but still is a source of serious nuisance.)

The smell from the refuse heap was also very objectionable, and equally characteristic, so that the one could be differentiated from the other by an unbiassed observer with a keen sense of smell. In my letters to Dr. Burton and to Dr. Pattin in April, 1910, I drew special attention to the opinion that, although the complaint of nuisance at the time was limited to objectionable smell, the house refuse deposit, if left uncovered would, in my opinion, inevitably give rise during the coming summer months to a much



graver nuisance *through the breeding of house flies*. After a preliminary communication in reply, I received a further letter from Dr. Pattin, who had meanwhile consulted the Town Clerk, to say that the Corporation would take every precaution so that neither eye nor nose would be offended. The Henstead Rural District Council received reports from their Medical Officer of Health and Inspector of Nuisances, and deputed a Committee to view the site, and then communicated with the Norwich Corporation requesting them to abate the nuisance—threatening proceedings if unabated. Covering over of the deposit was at first imperfectly done, and in the summer (as I had predicted) a great plague of flies emanated from the heap, increasing in prodigious numbers as the weeks wore on. The village of Postwick suffered very severely from the plague of flies and smells; and Dr. Back, M.O.H. for Blofield R.D., wrote a strong report in July on the nuisance arising from the refuse deposit on the other side of the river within the boundaries of the Henstead R.D.C. Further representations were made to the County Council and to the Local Government Board, and the Board deputed one of their Inspectors—Dr. S. Monckton Copeman, F.R.S.—to inquire into the matter. Dr. Copeman was accompanied by Dr. Pattin and myself on the occasion of his first tour of inspection; and we visited together the Sewage Farm and the site of deposit. Later, in company with Dr. Back, Dr. Copeman and I visited Postwick Hall and Postwick village. We found at the site of deposit not only thousands of flies but numerous larvæ and pupæ among the refuse. Dr. Copeman, with the assistance of Messrs. Howlett and Merriman, made experimental observations with flies caught on the heap, which were then coloured so as to be recognisable again, and then released *in situ*. Some of these flies were subsequently caught in Postwick village and readily identified—so that what we had already inferred was actually demonstrated, that the flies bred in the refuse winged their way or were wind carried over more than 1000 yards to this village.

I endeavoured in the summer of 1910 to ascertain if there was any unusual evidence of diarrhœa among bottle-fed infants in the parish of Postwick, but found that a bottle-fed baby was *rara avis* in the village—the total population being only about 300, and there being but 7 children under two years of age, and only 1 child under one year of age bottle-fed. Mr. King, the Blofield District Inspector of Nuisances, with Dr. Back's permission, kindly made the house to house inquiry for me.

How much of the stench was due to the refuse heap as apart from the sewage sludge was not an easy matter to determine, but a few persons I interrogated said that the smell had been noticed for years, 'only it had been worse than ever this year! The smell of previous years could have been due only to the sewage farm, for there had been no deposit of refuse at Whitlingham during the summer of 1909 or previously, and the greater nuisance from smell during 1910 was undoubtedly in part due to the open lagoons of putrifying sludge already mentioned.

The Norwich Corporation improved their method for covering the refuse, so that each morning's deposit was covered over with earth-mould in the afternoon or next day, and subsequently turfed over. When the fly season terminated in a cold November complaints died down, and in February, 1911, when I visited the site of refuse deposit with Dr. Burton, M.O.H. for Henstead, together with a Sub-Committee of the Henstead R.D.C., we found that apparently efforts were being made to minimise nuisance from *smell* at the refuse site, short of stopping the actual deposit of refuse on the site; but we observed that there was still a nuisance from smell at the time of unloading and depositing the refuse—and we specially drew attention to our apprehensions that when the summer came round again the deposit might once again prove a serious nuisance and menace to health through the breeding of flies. The immediate covering over of the refuse which has continued to be systematically carried out by the Corporation, unquestionably somewhat reduced the fly plague, otherwise the exceptional summer of 1911 would undoubtedly have given rise to a worse fly-plague than prevailed during the wet and cool summer of 1910. Still, sufficient numbers of flies were bred in the heap and found their way to Postwick in 1911 to render this refuse heap a dangerous nuisance during the summer months.

In any case, in these days of efficient refuse destructors it is intolerable that a large city should dispose of its refuse in this primitive way, to the annoyance and risk of inhabitants in the neighbourhood of such deposit—houses out of the zone of olfactory nuisance having yet been subjected to the more dangerous and viler nuisance of myriads of flies coming from these objectionable, insanitary deposits into houses several hundreds of yards away, to the annoyance and risk of the inhabitants.



With regard to the smell from the sewage sludge I have suggested to the City Engineer the trial of an addition of electrolized salt water to the raw sewage before it enters the Travis tanks, and I believe inquiries are being made in this direction from Poplar and elsewhere, where this has been used.

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The following extracts shew what action has been taken by the various public bodies concerned in the nuisance at Whitlingham and Postwick :—

(1) *From the Annual Report of the M.O.H. for Henstead R.D.*

#### REPORT ON SEWAGE FARM, 1910.

“During the past year the Sewage Farm has received a great deal of attention. In March the new tanks on the Travis system were started, and as far as the tanks are concerned in the separation of the solids or sludge they have been quite successful. But many complaints have been received, chiefly from outside our District, of the stench arising from the deposits of sludge which is drawn off from the bottom of the tanks and gravitates to the low-lying fields, where it is run into trenches and perhaps lies for days before being covered up. In the summer the odour from these trenches was most offensive. In July there were four large lagoons full of liquid sludge giving off a most offensive smell. The osier carr was also saturated with the same sludge filth, and the Farm was a nuisance to the surrounding country. A report was made to the Council on this state of the Farm on August 16th, when the Clerk was directed to send urgent warning to the Norwich Corporation, a strong complaint was sent to the L.G.B., and a copy also to the Blofield R.D. Council. The warning to the Corporation had a beneficial effect, as the grips and channels were then cleaned out, the lagoons were covered in, and steps were taken to drain the osier carr. The sludge trenches were sprinkled with lime, and creosote was used to lessen the smell.”

## REPORT ON REFUSE HEAPS, 1910.

“In April last a complaint was received regarding a nuisance arising from an accumulation of refuse on the Norwich Corporation Farm. The refuse comes down from Norwich by wherry and is deposited on the marshes opposite Postwick Grove to a height of about 12 feet, and at the rate of about 120 tons daily. The deposit began on January 11th; on April 26th we made a written report to the Council, and again on May the 24th. In July a dock was completed so that the wherries did not unload from the river bank. During July complaints were received about a plague of flies in Postwick, and later on Dr. Copeman proved that some of the flies that he marked came from the refuse heaps, which are recognised as a good breeding ground for flies. On July 11th the Chairman and a Deputation of the Council inspected and detected but little smell. On July 19th a letter was sent to the Corporation which had a beneficial effect, as the heaps were sprayed with paraffin and covered up as soon as possible.”

(2) *From the Annual Report of the M.O.H. for Blofield R.D.*

### THE NUISANCE AT POSTWICK.

“In the early summer a serious nuisance and danger to the public health, arising from the deposit of refuse from the City of Norwich on the bank of the river opposite to the village of Postwick, attracted considerable attention.

“For several months the village had suffered from a horrible stench arising from this huge heap of decomposing refuse, and during the short spell of hot weather in June there was added to the nuisance of the smell a veritable plague of house flies. The flies swarmed into dwelling-house, settling on articles of food, and when it became known that they originated from the refuse heap, fears were entertained that they would bring with them germs of infectious disease.

“Dr. Copeman, a Medical Officer of the Local Government Board, made a prolonged stay in Postwick investigating the whole circumstance of the nuisance, more particularly with reference to the question of the refuse heap being the breeding ground of the flies. I regret the Council have not been furnished with a copy of Dr. Copeman's Report, which must have been an



exceedingly interesting one, but I believe that the experiments carried out by him left no doubt as to the identity of the Postwick flies with those bred on the dust heap more than a thousand yards away.

“ In the course of my many visits to Postwick I became aware that the village suffered from a second stench, differing in character from that arising from the refuse heap, the source of which was the sludge trenches of the Norwich Sewage Farm situated still further to the South. Odours from these two distinct sources would both be wafted by the same Southerly breezes, and might well be mistaken by the villagers the one for the other. The odour from the sludge trenches is, however, more pungent and penetrating, and of greater volume than that from the refuse heap, and quite unmistakable to a connoisseur.

“ On the dust heap more care has been taken to cover with the silt from street gullies the decomposing refuse, and paraffin has been sprinkled on the surface with the view of destroying the larvæ of the flies. It is doubtful if these measures will be altogether successful in abating the nuisance, and, should hot weather prevail in the summer, it is not unlikely that the smell and the flies will again be in evidence.”

(3) *From Quarterly Reports of the County M.O.H.—September 3rd, 1910.*

“ Dr. Back, Medical Officer of Health for Blofield, presented a special Report, dated July 4th, 1910, to the Blofield Rural District Council, urging action on the part of this Council towards the abatement of this nuisance.

“ The numerous letters and complaints which have appeared in the local newspapers testify to the inconvenience and discomfort which have been felt by persons residing in, or passing through, Postwick Village, from the malodorous effluvia arising from the Norwich Sewage Farm and large refuse deposits on the Whitlingham Marshes. Although the covering over with earth and turf of the refuse on the Marshes very largely mitigates the extremely offensive odour which characterises fermenting organic filth of this nature, it yet remains a fact that there are by now several thousands of tons of putrifying filth on the Marshes within half-a-mile of Postwick Village. A considerable proportion of the smell nuisance appears to be due to the large amount of sludge which has to be dealt with at the Sewage Works.

“ The disposal of the house refuse could be inoffensively secured, within a reasonable time, by the provision of a suitable number of modern destructors—but the sewage sludge difficulty could not be quite so easily determined.

“ Dr. Monckton-Copeman, F.R.S., Inspector of the Local Government Board, made a visit of inspection to the site of refuse deposit and the Sewage Works on July 14th, and his Report is being awaited with anxious interest by all the authorities concerned.

“ I asked Dr. Back, the District Medical Officer of Health for Blofield, to let me know if there was any evidence of the health of the inhabitants of Postwick being affected, or if the fly plague became troublesome again. He has replied that he knows of no serious case of illness, but that complaints have been made of headaches and nausea caused by the smell. The extreme olfactory nuisance is almost universally admitted. The Corporation have adopted a suggestion made by Dr. Hardyman, of the Henstead Rural District, to spray the recent deposits of refuse with petroleum; they are subsequently covered over with earth and turfed. This should certainly tend to destroy the larvæ of flies and prevent them from propagating near the surface.

“ The Rural District Council of Henstead is taking action, and have intimated to the Norwich City Authorities that unless immediate action is taken to abate the nuisance from the Sewage Farm, etc, they will feel compelled to apply for an injunction.”

*December 3rd, 1910.*

“ Although the larger portion of the deposit is turfed over, there is always the open side where actual tipping is taking place, and on the windward side of this the stink of the decaying organic matter is very nauseating and peculiarly penetrating.

“ This great heap of decaying refuse is also a great attraction for rats. I was astonished to note the large numbers of rat trails in the vicinity of this deposit.



“No doubt the dumping of refuse is more economical than the burning of it—but a Health Authority which possesses a refuse destructor is, in my opinion, guilty of a sanitary sin in not taking full advantage of such destructor, and should see that its spending Committees each take their proper share of any expense involved.

“The Committee are already aware that, following on Dr. Monckton Copeman’s Report, the Local Government Board have enquired of the Norwich Corporation as to what steps they are taking to mitigate the nuisance, the complaints as to which their Inspector advises them are well founded.”

(4) *From Minutes of the Norfolk County Council, 7th January, 1911.*

“The Public Health Committee have received a copy of the letter which the Local Government Board have addressed to the Town Clerk, as follows:—

“Sir,—I am directed by the Local Government Board to state that they have now received the Report of their Inspector, Dr. Copeman, in regard to his investigations of the complaints which have been made in reference to the deposit of refuse by the Corporation on land at Whitlingham, and also to the sewage farm there.

“Dr. Copeman reports that the complaints are well founded. His investigations have satisfied him that the excessive quantity of flies which were found at Postwick during the summer were due to the large breeding-ground provided by the accumulations of refuse on the tip which the Corporation are using. He also reports that on occasion the refuse emits an intense pungent smell which may be observed at distances of from 400 to 1000 yards or more from the tip.

“As regards the sewage farm, the Inspector reports that at some distance from the farm he observed a specially sickly and sickening odour, which he attributed to the sludge trenches and effluent channels. The Board understand that the Corporation are making certain experiments with a view to dealing effectively with the sludge.

“They will be glad to be informed, in detail, in what ways the Town Council propose to remove these grounds of complaint.

“I am, Sir, your obedient Servant,

“(Sd.) J. S. DAVY,

“Assistant Secretary.”

“ The Committee instructed Dr. Nash to make a Report on the farm, and the same is sent out herewith.

“ They have also received the following Resolution from the Bramerton Parish Council :—

“ ‘ That, as serious complaint has been made in this Parish of the nuisances caused by the Sewage Farm of the Norwich Corporation and the rubbish heaps put down by it opposite Postwick village, and as this Council find these complaints to be established and that it was the duty of the Henstead District Council to have caused the Norwich Corporation to have discontinued the nuisance.

“ ‘ And as this Council have waited till the present in order to give the District Council time to intervene and prohibit the nuisance. Now the District Council having failed in this, and having failed to enforce its own Sanitary Rules, this Parish Council, believing that the matter is being trifled with, ask the County Council, in accordance with Sec. 16 (1) Local Government Act, 1894, to take the matter over through default of the District Council, and themselves compel the Norwich Corporation to discontinue the nuisances referred to.’

“ The Committee are in favour of adopting the course suggested by the Parish Council, but as this will involve legal action it will probably be well that the whole matter should be carefully considered by the Law and Parliamentary Committee before the Council finally act upon the Resolution, especially as notice of the Complaint must be given to the District Council and due Inquiry made according to law before the Resolution is passed. The Committee suggest that the Inquiry should be held by the Law and Parliamentary Committee.”

(5) *From Minutes of the Norfolk County Council, April 1st, 1911.*

“ The Law and Parliamentary Committee report that they held an Inquiry into the allegation by the Bramerton Parish Council that the Henstead District Council had failed in their duty to take steps to remove the nuisance caused by the Sewage Farm. The matter was thoroughly threshed out at the Inquiry in the most satisfactory way, and the District Councils are renewing their efforts to deal with the nuisances.



“ Having regard to the fact that *litigation* may ensue, it is not advisable at the present moment to go more fully into details. The Council may be assured that the Law and Parliamentary Committee, in conjunction with the Public Health Committee, will take care that the matter is not overlooked.”

Dr. Copeman's full Report to the Local Government Board has not been printed, so far as I am aware, but a report on an Experimental Investigation on the Range of Flight of Flies, by Messrs. Copeman, Howlett, and Merriman is incorporated in No. 4 of the series of “ Further Reports on Flies as Carriers of Infection, ’ published by the Local Government Board. This Report is founded on observations made at Postwick in connection with the refuse tip and plague of flies in 1910.

It should be remembered that flies became a veritable plague in Postwick at a considerably earlier period than is usual in the Summer, and careful investigations revealed no other likely source than the great refuse heaps on Whitlingham Marshes. The experiments with coloured flies showed that on each occasion on which several hundred flies were liberated, a certain number were subsequently recovered, within 45 hours or less, from human habitations in Postwick, at points of the compass which were apparently dependent, for the most part, on the direction of the prevailing wind, and at Distances ranging from 300 yards to 1700 yards from the refuse deposit.

Two flies on one occasion were caught at a distance of 800 yards in a direct line from the point at which they were set free, one 35 minutes and another 45 minutes after being liberated.



## Housing of the Working Classes.

The Select Committee of 1906 laid particular stress on the difficulty of acquiring land for the purposes of the Housing Acts, and generally on the financial aspects of the housing question. Section 3 of the Act of 1909 now facilitates the efforts of Local Authorities.

Not every Local Authority had taken action during 1910 to put their powers under the new Act into force, and a few of the District Medical Officers' Reports made no reference to the Act. In such cases I have applied for further information.

The Regulations of the Local Government Board, under Section 17 (1) of the new Act, were issued in September, 1910, requiring, *inter alia*, that Local Authorities shall cause to be prepared from time to time, by the Medical Officer of Health, or by an officer designated by the Authority but acting under the direction and supervision of the Medical Officer, a list or lists of dwelling-houses the early inspection of which is, in the opinion of the Medical Officer of Health, desirable. It is sometimes difficult in a rural village to specify each house separately. The Regulation meets this by allowing the list or lists to relate to the dwelling-houses "within a defined area." Records have to be kept of the inspections made, and must contain certain defined information. These have to be taken into consideration by the Local Authority, who are to give all such directions and take all such action within their power as may be necessary or desirable, and a note of such directions or action has to be added to the records.

Article V. of the Regulations requires that the Medical Officer of Health shall include in his Annual Report information and particulars in tabular form in regard to the number of dwelling-houses inspected under and for the purposes of Section 17 of the Act of 1909—the number which on inspection were considered so dangerous or injurious to health as to be unfit for human habitation, the number of representations made to the Local Authority with a view to the making of closing orders, the number of closing orders made, the number in which defects were remedied without the making of closing orders, the number which after the making of closing orders were rendered fit for human habitation, and the general character of the defects found.



Should a complaint be made to the County Council by the Parish Council or Parish Meeting of any parish in any rural district of the County, or by any four inhabitant householders of that district, Sections 12 and 13 of Part I. of the Act of 1909 give powers to the County Council to act in default of a Rural District Council under Part III. of the Act of 1890.

The Regulations not having been issued until September, 1910, it was felt that beyond making the necessary arrangements to determine the procedure to be adopted under these Regulations to give effect to the requirements of Sub-Section (1) of Section 17 of the Act of 1909, it could hardly be expected that all the District Councils could make much headway. But it was equally felt that every District Council should have all its machinery in working order to carry out the requirements of the Sub-Section from the beginning of 1911. Some Councils, however, especially those which had previously given some attention to the housing question, made a definite advance in 1910. This is shown by the following extracts from among the District Medical Officers of Health Reports relating to the year 1910.

The Medical Officer of Health of the Downham Rural District, Dr. G. F. Cross, devotes nine pages, or about a fourth of his able Report to the Housing Question, pointing out "that the provision of adequate home surroundings is a matter of national concern," and yet even when this is recognised, "progress in remedying overcrowding and its attendant evils is slow. We are all waiting for someone else to begin."

Dr. Cross and the Sanitary Inspector systematically inspected the dwelling-houses in the village of Hilgay, and in addition inspected and recorded as many houses elsewhere as called for immediate attention. Under the supervision of the Medical Officer of Health, the Sanitary Inspector drew up a Report on the village of Hilgay, which showed that a total population of 653 (504 adults and 149 children under 10 years of age) were homed in 174 houses, giving an average of 3.75 persons per house. Five cases of overcrowding were found, in each case occurring in houses which had only two bedrooms. The Report gives information as to the construction of the houses, the arrangements for the storage of food, the water supply, particulars as to drainage, sewerage, and privy accommodation, and the means provided for dealing with house refuse. In 94 houses the floors were below ground-level. Twenty-two houses each have but one door. Six houses are back-to-

back, and 15 houses are not spouted. In 122 houses inadequate provision was found for food storage, only 52 houses being provided with ventilated pantries. Seventy-three houses obtained drinking water from pump wells, one well serving no fewer than 16 houses, 2 each serve 7 houses and 1 serves 6 houses. Twelve wells each fitted with a windlass serve 51 houses, 1 well serving no fewer than 15 houses. The occupants of 15 houses obtain their drinking water only on suffrage. In 35 cases the drinking water is obtained from the river.

Eighty of the houses are drained, 25 being connected with the sewers. Ninety-four houses are without drains. Sixty-six houses are without any paving in the neighbourhood of the doors.

Two sewers discharge into the river direct, 3 discharge into dykes and so ultimately into the river, 3 of the sewers discharging into the river above the point where 35 houses take their drinking water. There is no preliminary treatment of the sewage.

In the *Aylsham R.D.* preparations were made in 1910 for carrying out the provisions of the Act of 1909, schedules have been provided affording space for the full description of 4 cottages on each schedule, to include all the information required under Articles II. and III. of the Local Government Board Order of the 2nd September, 1910. These will present a faithful account of the sufficiency or otherwise of the cottage accommodation in each village.

Dr. Back reminds his Authority of the powers they possess under Section 15 of the Act of causing to be remedied any sanitary defect or deficiency discovered in individual cottages so as to ensure that they may be "reasonably fit for habitation." He goes on to say, "I believe few, if any, cottages in your district will be found in so dilapidated a state as to need to be closed under Section 17 of the Act. I offer this opinion after reading the description of the cottage at East Runton, which recently on an appeal being made to the Local Government Board, was pronounced to be 'fit for human habitation.'"

Dr. Back reports for *Blofield R.D.C.* that Schedules have been provided for records of inspections, and the Medical Officer of Health had a list of 42 dwelling houses, the early inspection of which he deemed desirable—but no further action was taken by the Council during the year 1910.



The *Depwade R.D.C.* has adopted new Building Bye-laws which came into force in February, 1910. Plans were approved for 7 cottages at Pulham Mary, 1 at Billingsford, 3 at Thelveton, and 3 at Wortwell. Two cottages were also erected at Moulton. Three cottages at Pulham Mary, 1 at Rushall, and 1 at Hempnall were vacated on notice that they were unfit for habitation. Several houses, damp and dilapidated, are stated to have been put in repair, 6 cases of overcrowding were dealt with, and the M.O.H. says, "Great credit is due to your Inspectors for the way in which they procure an abatement of so serious a nuisance."

In *Docking R.D.* no systematic inspection was attempted during 1910, but 4 police stations, which the County Council had instructed me to bring to the knowledge of the District M.O.H., were reported on, and 2 cottages—1 at Thornham and 1 at East Rudham—were declared unfit for human habitation, and the conditions were remedied in the former instance.

In *Erpingham R.D.* it is reported generally that the cottages are mostly old and low, with small rooms. The bedroom windows being very small, ventilation is deficient. "On some of the larger estates, however, and also by private enterprise, old cottages have been reconstructed or new ones provided." In numerous instances there were only two bedrooms and in some there is only one. The M.O.H. says:—"The difficulty one has to contend with is in deciding as to the suitability of a building as being fit for human occupation or not," and instances the wooden shed at East Runton which he condemned and which on appeal to the Local Government Board was considered to be fit for human habitation. At the L.G.B. inquiry it was ascertained that the erection was watertight, clean, and provided with means of ventilation. It seems a pity that this erection was selected for action simply because it was not an ordinary building, when there must be numerous cottages in the district in defective repair, where dampness, defective light, and ventilation and uncleanness would have been obvious at a L.G.B. inquiry. To prevent the erection of wooden sheds, old railway carriages, etc., as dwelling-houses, the Authority needs to have building bye-laws to which all new buildings must conform.

In *East and West Flegg* "the villages are being inspected in alphabetical order."

In *Forehoe* "a further improvement in the condition of the houses" is reported, and the Inspector is "making a second house-to-house inspection throughout the whole district."

In *Henstead* "the housing accommodation of the district as a whole is still insufficient." In Hethersett, of 215 houses inspected none were considered unfit for human habitation, but defects were remedied in 21 instances, or about 10 per cent.

In *Loddon and Clavering* "there are without doubt some (houses) which ought to be closed were other accommodation available." 329 house inspections were made.

No allusion to Housing accommodation is made in the Report for *West Lynn*.\*

In *Freebridge Lynn R.D.* house-to-house inspections were made in 11 villages, and other inspections in 9 villages. In all 796 inspections were made, revealing defects of light, ventilation, leaky roofs, and defective floors with resulting dampness. As a result, 182 houses were altered and improved, and 35 others were receiving attention. Two cottages were voluntarily closed at Castleacre.

In *Marshland R.D.* no arrangements were made during 1910 for carrying out the provisions of the Act, but the matter was under consideration at the date of the Medical Officer's Report. In the meantime 30 houses had been inspected by the M.O.H. and defects attended to.

In *Mitford and Launditch R.D.* arrangements were made for the complete inspection of the district, and considerable progress made, but no definite action was taken in 1910, it being stated that action was to be taken in 1911.

Dr. D. Turner Belding, M.O.H., suggests that if the records are to be of any avail, and the general character of the cottages improved, all the villages should be numbered: at present the streets have no names and the houses no numbers--the only way is by reference to the church, school, or public-house.

There are no building bye-laws in force.

\* *Since my drawing attention to this an Addendum Report has recently been forwarded to me stating that housing accommodation is ample.*



The Report for *St. Faiths' R.D.* for 1910 makes no allusion to the Housing Acts.

In *Smallburgh R.D.* it is recognised that the housing accommodation in many villages is inadequate, and that many cottages will have to be built to accommodate large families. Inquiries by the District Council were held at Horning and at Hasbro', and plans were prepared for building six cottages at Horning.\*

Over 800 houses were inspected. A very bad case of overcrowding was found at Sutton, 10 people sleeping in two bedrooms deficient in air-space, light, and ventilation. A house at Potter Heigham was closed as unfit for habitation.

There is no supervision over houses in course of erection.

In *Swaffham R.D.* general insufficiency of accommodation is again reported. The M.O.H. says: "One finds that many of the houses are really unfit for habitation, and feels inclined to apply forthwith for closing orders, but immediately the question arises, where are the displaced tenants to find fresh houses?"

Improvements have been made in various parts, *e.g.*, Narborough. The Inspector of Nuisances is compiling a register of houses.

In 8 villages (notably Great Cressingham) 43 houses were found requiring attention, of which 17 were stated to be structurally defective and unfit.

In *Thetford R.D.* the M.O.H. again reports his hesitancy to condemn houses "until better houses can be provided at rents within the means of the poorer inhabitants." There are no building bye-laws.

In *Walsingham, R.D.*, as elsewhere, "the principal difficulty is to provide the labourer with a large family with sufficient accommodation." In certain parts, especially in the villages round Fakenham, Melton Constable, and Great Ryburgh, there is a definite scarcity of cottages. Of 9 cottages reported as unfit at Stiffkey, 7 have been put in a habitable condition, and 2 were not completed.

\* *These houses have now been built, and the Smallburgh R.D. Council deserves credit for its pioneer work in the County.*

In *Wayland, R.D.*, it was recorded that 6 houses previously unfit had been rendered habitable, 1 house was closed, and two new houses were built. The M.O.H. draws the attention of the District Council to the need for the preparation of a Register as required by the Regulations under Section 17 of the Act of 1909.

## HOUSING ACCOMMODATION IN THE URBAN DISTRICTS.

*Cromer*.—"Is becoming inadequate—a tendency to overcrowd in the smaller cottages. Bye-laws in force. 45 houses were inspected, and 25 found with defects. In 18 action has been taken to remedy the defects.

*East Dereham*.—Preparations made for complete inspection.

*Downham Market*.—Generally sufficient. Defective cottages in Priory Road are receiving attention—none condemned as unfit for habitation.

*Diss*.—Has 620 cottages with a rental below £8 per annum. New cottages built are at once occupied. The Council has agreed to pave the yards of certain property.

*New Hunstanton*.—No note in the Report of the M.O.H.

*Sheringham*.—"Satisfactory." The cottages of the old fishing village are gradually disappearing. There is still some scarcity of four-room cottages at a moderate rental. Bye-laws are in force.

*Swaffham*.—Eleven defective houses have been rendered habitable.

*North Walsham*.—Accommodation ample. A special district has been selected for inspection under the Act.

*Walsoken*.—Accommodation ample—a considerable number of new houses being built. A general survey is now being made.

*Wells-on-Sea*.—House accommodation and population practically the same as during the past ten years.

*Thetford Municipal Borough*.—"On the whole fairly good." Pike Lane area is being improved. House-to-house inspection is carried out. Bye-laws now adopted.

*King's Lynn M.B.*—Over 100 houses have been systematically inspected and details laid before the Borough Sanitary Committee. 33 representations were made, and action taken in most.



# Summary of Reports of District Medical Officers of Health for 1910.

## A. URBAN DISTRICTS.

*King's Lynn Borough.*—M.O.H., J. R. KINGDON, M.R.C.S. Population (Census, 1911) 20,205. Estimated for 1910, 21,760.

1. General and infantile mortality low.
2. Notified cases of infectious disease per 1000 population 2·33.
3. Housing. Over 100 houses systematically inspected and entered in Register, the details being laid before the Sanitary Committee, who themselves inspected 42 houses. 33 representations were made by the M.O.H. and Sanitary Inspector. Several closing orders made.
4. Water supply excellent.

*Thetford Borough.*—M.O.H., ALFRED HARRIS, M.B. Population (Census 1911) 4,778. Estimated for 1910, 4,613.

1. General and infantile mortality low.
2. No notifications of infectious disease under the Act during 1910.
3. Housing, fairly good. Several improvements in Pike Lane area previously reported on, but better houses at low rents still desired. House-to-house inspection carried on.
4. Water supply adequate and pure.
5. New sewers to Pike Lane area—filtration at two outfalls—not working satisfactorily.

*Cromer Urban.*—M.O.H., R. C. M. COLVIN-SMITH, M.B. Population (Census, 1911) 4,074. Estimated for 1910, 4,263.

1. General and infantile mortality very low.
2. Notified cases of infectious diseases per 1000 population 2·3.
3. Housing accommodation for working classes becoming inadequate, a tendency to overcrowding in the smaller cottages.
4. Water supply wholesome and sufficient.
5. Sewerage and drainage. Water closet system, septic tanks; overflow to the sea.

- . Disposal of refuse. Under consideration ; at present tipped.
7. Hospital isolation accommodation for Scarlet Fever.

*East Dereham Urban.*—M.O.H., D. TURNER BELDING, M.R.C.S. Population (Census, 1911) 5,729. Estimated for 1910, 5,545.

1. General and infantile mortality low.
2. Notified cases of infectious disease per 1000 population 3·6. No isolation hospital.
3. Water organically pure, but hard ; a softening process installed, but results not always satisfactory.
3. Sewerage works. Good progress being made, and another circular filter being constructed. The outlying parts of the district are not connected with the sewers or water supply.
4. Housing. Preparations made for complete inspection.

*Diss Urban.*—M.O.H., H. M. SPIERS, M.D. Population (Census, 1911) 3,769. Estimated for 1910, 3,800.

1. General and infantile mortality low.
2. Notified cases of infectious diseases per 1000 population 1·8. No isolation hospital in use.
3. Water supply. A trial bore and pumping secured a copious supply of a hard water with rather high chloride and free ammonia, but reported free from organic pollution. Report being made to L.G.B.
4. A plan of the town's sewers is being prepared. The sewage is filtered through sand, before discharging into the river.
5. Housing. New cottages are immediately occupied, a need of this class of house is thus evidenced.

*Downham Market Urban.*—M.O.H., E. G. WALES, M.B. Population (Census, 1911) 2,497. Estimated for 1910, 2,500.

1. General and infantile mortality low.
2. Notified cases of infectious disease per 1000 population 4·8 (chiefly mild Scarlet Fever). No isolation hospital.



3. House accommodation sufficient, better than years ago.
4. Sewage Disposal Scheme formed subject of L.G.B. inquiry in 1910.
5. Water supply. From 4 public wells and Wisbech Water Co.'s mains.  
Certain extensions of mains much needed.
6. House refuse collected 3 mornings in each week.

*New Hunstanton Urban.*—M.O.H., B. G. SUMPTER, M.B. Population (Census, 1911) 2,510. Estimated for 1910, 1,893.

1. General death-rate low, infantile mortality nil.
2. 19 cases of Measles, and 3 of Enteric Fever notified during 1910. The isolation hospital was not used.
3. Water supply from springs, occasional analysis advised by the M.O.H.
4. Sewerage. Suggestions of plan of town's drainage and of extension of outfall still under consideration.
5. Refuse burnt in destructor.

*Sheringham Urban.*—M.O.H., J. E. LINNELL, M.B., D.P.H. Population (Census, 1911) 3,376. Estimated for 1910, 3,000.

1. General and infantile mortality low.
2. Measles was prevalent, but only 1 case of Scarlet Fever, and no cases of Diphtheria or Typhoid Fever. No hospital for isolation.
3. Water supply excellent.
4. A loan for a Refuse Destructor and Disinfecting Apparatus was allowed by L.G.B. after inquiry, but local opposition to site has placed matter in abeyance.

*Swaffham U.D.C.*—M.O.H., A. W. THOMAS, M.R.C.S. Population (Census, 1911) 3,234. Estimated for 1910, 3,300.

1. General and infantile death-rates moderate.
2. Notified cases of infectious disease per 1000 population 0.6.
3. Housing insufficient, overcrowding prevalent.
4. Water supply from borings in the chalk, excellent quality.

5. Sewerage on the separate system. Sewage proper treated at a farm after preliminary admixture with alumino-ferric.
6. Scavenging done by Council.

*North Walsham.*—M.O.H., J. SHEPHEARD, M.R.C.S. Population (Census, 1911) 4,254. Estimated for 1910, 4,386.

1. General and infantile death-rates low.
2. House accommodation ample. A special district has been selected for inspection.
3. Main water supply from a well; stated to be adequate.
4. Surface drainage by open drains.
5. Excrement removed from pails by Council's night carts. Special instructions issued to householders.
6. Only 2 cases of infectious disease. No isolation hospital.

*Walsoken U.D.C.*—M.O.H., H. GROOM, M.D. Population (Census, 1911) 3,898. Estimated for 1910, 3,667.

1. General and infantile death-rates moderate.
2. Notified cases of infectious diseases (excluding Measles) per 1000 population 5·3.
3. Housing accommodation ample; a considerable number of new houses built.
4. Water supply good from Wisbech water mains.
5. Sewage discharges into the main sewers of Wisbech, the adjoining town. In outlying parts, privies and cesspools.
6. Removal of house refuse, as a rule, well done by scavenger.

*Wells-next-the-Sea U.D.*—M.O.H., GORDON CALTHORP, M.B. Population (Census, 1911) 2,565. Estimated for 1910, 2,445.

1. General death-rate high; infantile mortality low.
2. Measles was very prevalent but only 1 death. 3 cases of Diphtheria and 1 of Scarlet Fever. No isolation hospital.
3. Water supply plentiful from wells.
4. Slop waters are drained to the quay. Privies, cemented boxes, and pails emptied by the town scavenger. A fee is charged, which sometimes leads to nuisance.



## B. Rural Districts.

*Aylsham R.D.*—M.O.H., Dr. H. H. BACK. Population (Census, 1911) 17,346. Estimated for 1910, 16,693.

1. General and infantile death-rate low.
2. Cases of notifiable infectious disease per 1000 population 1·7.
3. No public water supplies in the district.
4. River pollution at Coltishall diminished and receiving further attention.
5. Housing. Provision has been made for full description of houses systematically inspected, but nothing further in 1910.
6. A small isolation building for 3 patients is kept in repair in case of Small Pox.

*Blofield R.D.*—M.O.H., Dr. H. H. BACK. Population (Census, 1911) 12,159. Estimated for 1910, 10,658.

1. General and infantile mortality low.
2. Cases of notifiable diseases per 1000 population 2·5 (chiefly diphtheria notifications consequent on swabbings).
3. Water supply by wells. The M.O.H. states that Section 6 of the Public Health (Water) Act is disregarded by owners of property in the district.
4. Only a few villages in the district are drained.
5. Housing. The M.O.H. furnished a list of 42 dwelling-houses requiring early inspection. No further action in 1910.

*Depwade R.D.*—M.O.H., Dr. J. C. R. ROBINSON. Population (Census, 1911) 19,934. Estimated for 1910, 18,125.

1. General and infantile mortality lower.
2. Cases of notifiable infectious diseases per 1000 population 2·3.
3. No isolation hospital in district.
4. Housing. 5 dwellings vacated on notice as unfit for habitation. New building bye-laws came into effect in February, 1910. 2 new cottages erected, and plans for 16 passed.
5. No public water supply.

*Docking R.D.*—M.O.H., Dr. B. G. SUMPTER. Population (Census, 1911) 16,942. Estimated for 1910, 15,741.

1. Lowest death-rate recorded in the decade. Infantile mortality low.
2. Notifiable infectious diseases fewer. Cases of notifiable infectious diseases per 1000 population 3·6; chiefly Diphtheria. Of non-notifiable diseases, Measles was epidemic in 3 villages.
3. Housing. No systematic inspection was attempted in 1910.

*Downham R.D.*—M.O.H., Dr. G. F. CROSS. Population (Census, 1911) 15,527. Estimated for 1910, 14,500.

1. Lowest death-rate and infantile mortality recorded during the decade.
2. Cases of notifiable diseases per 1000 population 2·5.
3. No isolation hospital. A tent kept for Small Pox.
4. Housing. An informative report. No building bye-laws, the adoption of same advised by the M.O.H. 436 houses inspected, 8 representations for a closing order, and 3 closing orders made. Petition from Southery parish against closing orders, unless other cottages built. Systematic house inspection at Hilgay.
5. Water supply good where in the lines of the water mains of the Wisbech Waterworks Company. Doubtful elsewhere.

*East & West Flegg R.D.*—M.O.H., Dr. W. ROYDEN. Population (Census, 1911) 9,931. Estimated for 1910, 9,909.

1. General and infantile mortality low.
2. Notifiable diseases per 1000 population 6·2; chiefly Diphtheria.
3. No isolation hospital.
4. Water supply from wells; stated to be good and abundant.
5. Housing. The villages are being systematically inspected.

*Erpingham R.D.*—M.O.H., Dr. T. W. RICHARDSON. Population (Census, 1911) 17,137. Estimated for 1910, 18,263.

1. General and infantile mortality low.
2. Cases of notifiable disease per 1000 population 2·6. No isolation hospital.



3. Mundesley, Holt, Kelling, Overstrand, and East and West Runton have constant public supply of water.
4. Housing. Special report on cottage property at Briston ; defaults remedied. Cottages mostly old with small rooms.
5. The little towns with constant water supply are sewered.

*Forehoe R.D.*—M.O.H., Dr. LAMBERT LACK. Population (Census, 1911) 11,382. Estimated for 1910, 11,329.

1. General and infantile mortality low.
2. Cases of notifiable diseases per 1000 population 1·5.
3. Water supply from wells variable in quality.
4. Wymondham and Hingham have old barrel drains, originally constructed for surface water, now carry sewage.
5. Housing. Improvement wanted in accommodation and condition. A second house to house inspection in progress. 11 new houses constructed, 8 of them at Morley.

*Henstead R.D.*—M.O.H., Dr. S. H. BURTON. Population (Census, 1911) 10,285. Estimated for 1910, 10,358.

1. General and infantile mortality low.
2. Infectious disease notification—rate, 3·2 per 1000 population.
3. Water supply by wells plentiful, but variable in quality.
4. Nuisances caused by the Norwich Sewage Works and deposit of city refuse were subjects of inquiry, complaint, and correspondence.
5. Housing. Special Report on parish of Hethersett. 215 houses inspected ; no representations made, but 21 houses had defects, which were remedied. 15 cases of overcrowding were detected in this district.

*Loddon and Clavering R.D.*—M.O.H., Dr. L. T. McLINTOCK. (In 1910 Dr. PRIOR, who Reports for the year.) Population (Census, 1911) 12,550. Estimated for 1910, 11,953.

1. General and infantile mortality moderate.
2. Decrease in number of notifications of infectious diseases, 1·7 per 1000 population.

3. Water supply chiefly from wells ; in some places from ponds.
4. Housing. The whole district has undergone a house to house inspection. Some are built of clay with thatched roofs ; none were reported unfit for habitation.
5. Drainage where it exists is to a cesspool overflowing into ditches. Scavenging done by occupiers or at their expense.

*West Lynn R.D.*—M.O.H., Dr. WEBSTER. Population (Census, 1911) 935. Estimated for 1910, 595.

1. General and infantile mortality low.
2. 6 notifications of infectious diseases ; 6·4 per 1000. No hospital accommodation.
3. Water supply still a matter of discussion, though King's Lynn mains are within half-a-mile of the parish boundary.
4. Housing. No reference in report.\* (See Note, p. 72.)

*Freebridge Lynn R.D.*—Population (Census, 1911) 12,107. Estimated for 1910, 11,847.

1. General mortality moderate. Infantile mortality low.
2. Infectious disease notification rate 2·06 per 1000 population.
3. Systematic house to house inspection made in 11 parishes, and with inspections in other parishes, a total of 196 inspections, in consequence of which 192 houses repaired and improved, 2 cottages voluntarily closed at Castleacre, 8 new houses built.
4. Water supply, a new public well constructed at Great Massingham.

*Marshland R.D.*—M.O.H., Dr. J. L. FORREST. Population (Census, 1911) 12,384. Estimated for 1910, 11,216.

1. General mortality reduced. Infantile mortality low.
2. Reduction in notifications of infectious diseases ; omitting Chicken Pox, 3·06 per 1000 population.
3. No isolation hospital accommodation.
4. Water supply. About half the district supplied by the Wisbech Water Company. The remainder depends on cisterns and shallow wells.



5. No system of sewage disposal beyond draining to cesspools. Pail system with regular scavenging suggested.
6. Housing. No arrangements made in 1910 for carrying out Act of 1909. M.O.H. inspected 30 houses meantime.

*Mitford & Launditch R.D.*—M.O.H., Dr. D. TURNER BELDING. Population (Census, 1911) 18,701. Estimated for 1910, 18,400.

1. General mortality reduced.
2. Infantile mortality low ; lowest on record.
3. No public water supplies. Shallow wells in use, and quality of water deteriorating. Abolition of privies and cesspools or a common public supply suggested.
4. Housing accommodation slightly improving. Considerable progress has been made in inspection, but no definite action taken during 1910.
5. No proper system of sewerage anywhere in the district.
6. No isolation hospital. 86 notifications of infectious disease, 4·5 per 1000 population. Copious reference to advantages of correlation of public health and school medical services—illustrated in the district.

*St. Faith's R.D.*—M.O.H., Dr. S. H. LONG. Population (Census, 1911) 10,807. Estimated for 1910, 11,163.

1. General and infantile mortality moderate, an increase on 1909.
2. Incidence of notifiable infectious diseases reduced 2·03 per 1,000 population.
3. Water supply no shortage. A system of scavenging started at Lenwade with object of reducing pollution of wells.
4. Housing. No reference in Report.

*Smallburgh R.D.*—M.O.H., Dr. B. D. Z. WRIGHT. Population (Census, 1911) 13,424. Estimated for 1910, 13,847.

1. General mortality moderate ; infantile mortality low.
2. Incidence of notifiable diseases, as shewn by notifications, 2·99 per 1,000 population, chiefly Scarlet Fever.

3. Housing accommodation in many villages inadequate. Inquiries have been held at Horning and at Hasbro', and plans prepared for 6 cottages at Horning; 800 houses inspected, some bad cases of overcrowding. New houses required in Sutton; 1 house condemned and closed at Potter Heigham, no building bye-laws.
4. A Scheme for drainage of Horning was brought before the Council by the Yarmouth Water Works Company. Some pollution of the Bure occurs here.
5. No isolation hospital.

*Swaffham R.D.*—M.O.H., Dr. E. F. ROSE. Population (Census, 1911) 7,571. Estimated for 1910, 7,644.

1. General mortality above average.
2. Infantile mortality low.
3. Notifiable infectious diseases reduced, notifications 1·8 per 1,000 population.
4. Housing accommodation insufficient in 8 parishes, 43 houses inspected, 17 structurally unfit, 26 requiring repair, 11 cases of overcrowding abated.

*Thetford R.D.*—M.O.H., Dr. A. HARRIS. Population (Census, 1911) 10,061. Estimated for 1910, 9,950.

1. General and infantile mortality moderate.
2. Housing accommodation fairly good, but better houses needed. No building bye-laws.
3. No public water supply, shallow wells in vogue; water supply at East Harling still unsatisfactory, closure of condemned wells advised.
4. No system of sewerage in the district.
5. Notifications of infectious disease in 1910 2·3 per 1,000 population. No isolation hospital.



*Walsingham R.D.*—M.O.H., Dr. W. H. FISHER. Population (Census, 1911) 17,248. Estimated for 1910, 17,500.

1. General mortality reduced.
2. Infantile mortality low.
3. Incidence of notifiable infectious diseases reduced 1·15 per 1,000 population.
4. Scavenging adopted at Stiffkey and Blakeney.
5. Plans for sewage disposal of Fakenham completed, and a provisional agreement signed for purchase of 20 acres for a sewage farm. Melton Sewage Works improved.
6. Water supply from surface wells, 12 out of 32 samples analysed were found contaminated.
7. Housing bye-laws for new buildings since 1908, 20 plans of new buildings approved, 9 cottages at Stiffkey reported unfit for habitation, 7 put in habitable repairs, and the 2 others in hand.

*Wayland R.D.*—M.O.H., Dr. E. F. ROSE. Population (Census, 1911) 14,427. Estimated for 1910, 13,792.

1. General mortality reduced.
2. Infantile mortality moderate (increase as compared with 1909 no doubt due to Whooping Cough deaths).
3. Notifications of infectious diseases reduced 1·5 per 1000 population.
4. Non-notifiable diseases in shape of Whooping Cough was prevalent.
5. Housing. Improvements being effected. 6 houses placed in habitable repair. 2 new houses built. No action taken in 1910 with regard to preparation of Register under Housing Act. In Attleborough several new houses built recently for artizans.
6. Septic tank and filter beds at Attleborough working satisfactorily after a year's use.

## Milk Supplies.

These have to be reported upon by the District Medical Officers of Health,

Generally; inspection of the dairies and cowsheds is regularly carried out, and the remarks of Dr. Harris concerning the Thetford Rural District apply to many districts.

“Some improvement has taken place in the condition of the cowsheds, but some of them are still far below the standard required as to cleanliness and sanitation, and more stringent measures ought to be taken by the Council to enforce the provisions of the Cowsheds and Dairies Orders.”

As to milk supplies, what Dr. Back, M.O.H. for Aylsham R.D. and Blofield R.D., pointed out last year is corroborated by Dr. Wright, M.O.H. for Smallburgh R.D., who writes:—“The milk supply in some villages is inadequate.” Dr. Wright deplotes the prejudice against goat’s milk, and puts in a useful plea for the goat, which might often serve as the poor man’s cow.

In Thetford Rural District the milk supply is “fairly good, considering the fact that this is a poor grazing district.”

Dr. Fisher, M.O.H. for Walsingham R.D., suggests that his Council would find it satisfactory to appoint a Veterinary Surgeon to periodically inspect and report on the cows.

Dr. Belding, M.O.H. for Mitford and Launditch, thinks that every person who sells milk or butter, even in the smallest quantities, should be registered; so also every person who has anything to do with dairies or the milking of cows, any change to be at once notified to the M.O.H., so that no person can be employed who can convey infectious disease.

No action with regard to the veterinary inspection of cows for the detection of Tuberculosis is recorded for any district.

In Sheringham “it has been brought to the notice of each milkseller that the main object of the Bye-laws is to enforce cleanliness.”



## Food Inspection.

In *King's Lynn* the following seizures were made of articles unfit for the food of man :—

Date.	Articles Seized.	Results of Prosecution.
Feb. 18th ..	14 Carcases of Sheep ..	Fines £13 Costs £3 9s. 6d.
March 4th ..	Upper Thigh of Beef ..	„ £5 „ £1 13s. 6d.
Dec. 30th ..	12½ score of Oysters ..	No proceedings taken.
Oct. 28th ..	10-lbs. 14-ozs. of Sausages	Ditto.

13 carcases of Beef, 2 carcases of Pork, and 3 carcases of Mutton were voluntarily forfeited, the majority being Tuberculous.

There are 14 slaughter-houses in the Borough, which are frequently and systematically visited by the Inspector. Two insanitary slaughter-houses were closed and improvements effected in others.

A new public abattoir has been built by private enterprise at Highgate at a cost of about £2000.

In *Thetford Borough* the slaughter-houses are reported in good order. No meat was condemned.

In *Downham R.D.* 3 carcases were surrendered and destroyed.

In *Downham U.D.* “the Sanitary Inspector has had special instruction in meat inspection, and has made frequent inspections of meat exposed for sale.”

## Food Poisoning.

A special Memorandum issued by the Local Government Board in September, 1911, points out that the Board in diverse ways often becomes aware of cases of illness being attributed to food poisoning, but usually at a stage too late for any satisfactory investigation to be made by its inspectors, and consequent help to the officers of local authorities in dealing with the matter. Timely and fuller information might enable to be undertaken more effective preventive measures—at any rate better opportunities would be afforded for elucidating points at present obscure.

When a M.O.H. has evidence that a particular food is probably at fault he should at once investigate the conditions of its preparation and obtain sufficient material for chemical and bacteriological examination. The complete history of all cases should be obtained. Inquiries should be instituted immediately, and not postponed until the results of laboratory investigation are known.

## Employment of Children Act, 1903.

This Act provides for the limitation and regulation of child labour, and prohibits the employment of a child between the hours of 9 p.m. and 6 a.m. There are clauses providing against children carrying burdens likely to cause them injury, or being employed in any occupation likely to be injurious to their lives, limbs, health, or education.

In 1909 I was instructed to inquire and advise, from a medical point of view, in connection with the employment of children in fruit-picking in the districts of Walsoken and Terrington.

The Norfolk Schools in the fruit picking districts are given their summer vacation during the fruit-picking season, and in view of this I advised that there could be no reasonable objection to a proposed bye-law varying the terms of employment to an earlier hour than 6 a.m., particularly since railway exigencies involved an almost automatic cessation of fruit-picking by 5 p.m.

The County Council in January, 1910, adopted a bye-law varying the hours of employment of children in the Petty Sessional Divisions of Clackclose and Marshland, so as to be from 5 a.m. to 5 p.m. during such time only as the Schools may be closed for holidays in July, such bye-law not to apply to children under 10 years of age.

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## Meteorological Notes for 1910.

Total Rainfall—Norwich (A. W. P.)	..	31·84
Cromer ..	..	25·51
Coltishall .	..	30·99
Diss ..	..	28·53
Downham	..	26·43
Little Dunham	..	31·99
Blofield (Acle)	..	33·79

The total rainfall was considerably above the average (over 6 inches in excess in Norwich). March was the driest month; July was the wettest, though November and December were also very wet, November being cold and December mild. The summer was not only wet, but attended by severe thunderstorms. The thermometer readings were somewhat remarkable. Mr. A. W. Preston records that 80 degrees was reached on May 20th before 70 degrees had been touched on any previous day. The week ending June 21st was the finest and warmest of the summer, the thermometer reaching 79 degrees on the 19th. A cool, cloudy, and rainy period set in on June 22nd. The thermometer never exceeded 73·5 degrees all the rest of the summer. Over 7 inches of rain were registered during the ten weeks beginning June 22nd to the end of August. July temperature was 3 degrees below the average, while November was no less than 5 degrees below the normal. The total number of days on which rain was recorded was greatly in excess of the average—no fewer than 37 days beyond the normal number. The mean temperature of the year was nearly half a degree above the average, resulting chiefly from warm nights.

